TUJISE Turkish Journal of Islamic Economics

Financial Performance in Islamic Banking and *Shari'ah* Supervision under Interventionist Regulatory Approach: A System-GMM Dynamic Panel Analysis

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Abstract. The relationship between *Shari'ah* supervision and Islamic banks' (IBs) performance is still ambiguous particularly for banks across countries that have different regulatory environments. Pakistan adopts an interventionist regulatory approach which is exclusive to *Shari'ah* governance (SG) system in Pakistan. This approach differs from the other adopted approaches in countries that have either high or low degree of regulatory interference. Thus, this study examines how *Shari'ah* supervision mechanism, as represented by the *Shari'ah* supervisory board, and its characteristics, can influence the performance of IBs in Pakistan. The sample comprises 67 Islamic bank-year observations for the period from 2007 to 2015. The performance-governance relationship is estimated using a range of econometric techniques including the dynamic system-GMM estimator. The results reveal modest support for a positive association between *Shari'ah* supervision and performance. The study concludes that SG practices in the Pakistani IBs still suffer from some drawbacks which require more improvements by the respective regulators. Most of these drawbacks are related to the SG regulatory frameworks which are related to the SSBs' roles and characteristics.

Keywords: *Shari'ah* supervisory board, Interventionist regulatory approach, Islamic banks, Performance

JEL Classification: G2, G3

Introduction

Islamic banks (IBs) offer services similar to the conventional banks (CBs). Nonetheless, the main difference between these banks is that IBs are basically operating based on the *Shari'ah* principles (Nomran et al., 2018). This unique Islamic banking business model imposes some unique agency issues for IBs. As Zainuldin et al. (2018) claim, IBs are also likely to encounter additional agency problem besides

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DOI: 10.26414/A095
Turkish Journal of Islamic Economics (TUJISE)
tujise.org

Submitted : 12.06.2019
Revised : 14.04.2020
Accepted : 28.05.2020
Online First : 30.08.2020

the common agency problems that may occur between managers and shareholders, for instance in any case managers deviate from their duty, to ensure *Shari'ah* compliance. They add that agency problem also exists between managers and investment account holders (IAHs). IAHs share risks with IBs, but they cannot intervene in the IBs management decisions over the funds as they transfer the control to the bank (Ghayad, 2008).

Accordingly, the unique governance structure of IBs which comprises the *Shari'ah* supervisory boards (SSBs) besides the boards of directors (BoDs) is the main feature that makes the governance of IBs distinct from their conventional counterparts (Mollah and Zaman, 2015; Nomran et al., 2018). SSBs play an important role in mitigating agency problems by acting as an additional monitoring mechanism (Abdelsalam et al., 2016) that monitors the religious, behavioural, moral and ethical aspects of corporate management (Almutairi and Quttainah, 2017). For this, the existence of efficient *Shari'ah* supervision and effective SSBs are crucial to the Islamic banking industry. If the IBs fail to comply with the *Shari'ah* principles, depositors may withdraw their deposits and investors may cancel their investment agreements, which would decrease the IBs profitability and increase their risk (Nomran et al., 2018). SSB scrutinizes the legality of contract and IBs are obliged to undertake only approved contracts (Majeed and Zainab, 2018).

However, Nomran et al. (2018) assert that the *Shari'ah* governance[1] (SG) practices are unregulated in some jurisdictions, whilst in some other jurisdictions, the practices are regulated. They also add that while extreme intervention of regulatory agencies is preferred by some jurisdictions, it is not preferred by some others. Thus, concerns are raised regarding the feasibility of the SG practices as well as the independence and qualification of the SSBs in the IBs across jurisdictions that have different regulatory environments (Alkhamees, 2013; Grassa, 2013). These concerns have become more serious for that current SG practices in most countries are still weak and require further improvement especially in the regulatory frameworks that are related to the SSBs' duties and characteristics (Grassa, 2015).

Many countries develop different SG regulatory models to regulate the Islamic banking and finance activities. As the literature shows, the differences across jurisdictions in the degree of intervention of regulatory agencies is reflected in the five SG regulatory models, namely, reactive, passive, minimalist, pro-active and in-

1 "*Shari'ah* governance is referred as the system that provides conformity of all commercial transactions and activities of IFIs with *Shari'ah*" (Zahid and Khan, 2019, p.98).

terventionist (Hasan, 2010; Hasan, 2012). For the regulated jurisdictions, while the pro-active model which is only applied in Malaysia reflects the most extreme intervention of regulatory agencies (Nomran et al., 2018), the minimalist model which is applied in Kuwait, UAE, Bahrain and Qatar reflects the lowest intervention. Besides these two models, Pakistan adopts an interventionist regulatory model which is exclusive to *Shari'ah* governance (SG) system in Pakistan (Hasan, 2010; Hasan, 2012). This approach differs from the other adopted approaches in countries that have either high or low degrees of regulatory interference (see Figure 1). Under this approach, a third party institution is given the authority to make decision on *Shari'ah* issues related to the Islamic finance. In the case of Pakistan, the *Shari'ah* Federal Court is the highest authority although there is national SSB at the State Bank of Pakistan level (Hasan, 2010; Hasan, 2012). According to Nomran and Haron (2020c), SSB is one of the most important mechanisms to deal with SG both within an institution (SSB at bank level) and within a jurisdiction (SSB at national level). Besides SSB mechanism, there are other mechanisms that deal with SG issues e.g. (*Shari'ah* audit at bank level) and (*Shari'ah* Federal Court at national level as in Pakistan).

Figure 1 summaries the SG regulatory models classification across jurisdictions based on the degree of intervention of regulatory agencies. We adapted this Figure from the studies of (Grais and Pellegrini, 2006; Hasan, 2010; Hasan, 2011; Hasan, 2012; Hassan et al., 2013; Alkhamees, 2013; Grassa, 2015; Nomran et al., 2018). Figure 1 also shows that the reactive and passive regulatory models are applied in unregulated jurisdictions.

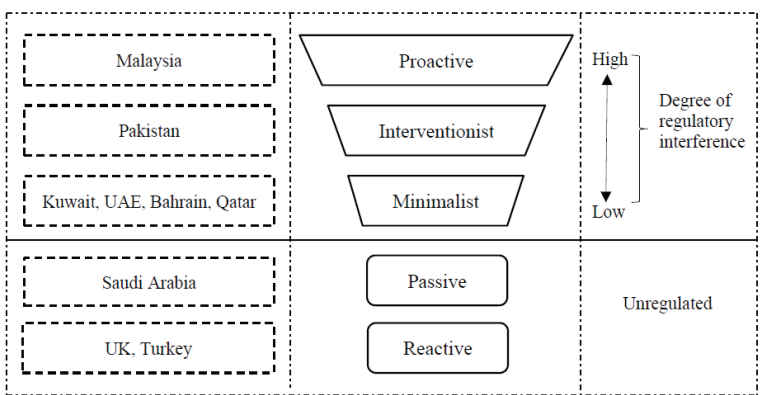

Figure 1. SG regulatory models based on the degree of intervention of regulatory agencies.

In general, only few empirical studies attempted to analyze the impact of SSB on the IB's performance (see, e.g., Mollah and Zaman, 2015; Farag et al., 2017; Nomran et al., 2018; Hakimi et al., 2018). More specifically, limited studies that have examined the extent to which the impact of SSB on IBs performance can be affected by the differences in the SG regulatory models across jurisdictions. In this context, Nomran et al. (2018) examined the relationship between SSB and IBs' performance in Malaysia being a country that applies the most extreme intervention of regulatory agencies (pro-active model). To the best of our knowledge, however, there is no empirical study that has examined this relationship under the interventionist model being applied in Pakistan so far. Thus, the current study extends the literature by examining how *Shari'ah* supervision mechanism, as represented by the SSB, and its characteristics, can influence IBs performance in Pakistan.

There are at least three reasons that motivate us to conduct this empirical study. First, there is a need to evaluate the current SG practices in Pakistan. This would help to explore the strengths and drawbacks points of the Pakistani regulatory framework that are related to the SSBs structure[2]. From a survey, Majeed and Zainab (2018) found that SSBs in the Pakistani IBs do not perform their roles well. The reasons, as they argue, include the absence of comprehensive regulatory framework for Islamic banking in Pakistan, as well as the lack of IBs human capital. Thus, this study is anticipated to offer useful information for the IBs regulators and policy makers in Pakistan on the effectiveness of the adopted SG regulatory model. The findings from this study will be helpful for these respective parties in Pakistan to improve the current SG practices. This is more so especially to the State Bank of Pakistan which has taken numerous initiatives to enhance Islamic banking, for instance, launching a strategic plan for Islamic Banking aiming to strengthen legal and regulatory structure; and improving *Shari'ah* governance (see, Rashid and Jabeen, 2016; Khan et al., 2017; Majeed and Zainab, 2018).

Second, another motivation to justify the need to conduct the current study is related to the performance of the Pakistani IBs. Recently, Khan et al. (2017) conduct an empirical study in the Pakistani banking industry context and found that IBs are relatively better in profitability than CBs. According to their argument, a probable reason for this includes risk management practices of IBs in Pakistan that

2 For example, Pakistan is among the countries that restrict the number of SSB positions a *Shari'ah* scholar can hold (Alkhamees, 2013). Grassa (2013), Grassa (2015), and Nomran et al. (2018) indicate that some jurisdictions restrict the numbers of membership for scholars in SSBs while some other do not.

are superior to CBs, as *Shari'ah* rules restrict pure speculation in monetary terms. As they mentioned, the Islamic principles dictates that all investments need to be backed by physical assets and pure speculation in money terms only is not allowed and that guarantee the stability and resilience of Islamic finance. They also indicated that IBs are less risky and hold more cash relative to total assets. Thus, it would be interesting to empirically explore to what extent the existence of *Shari'ah* supervision mechanism contributes to the IBs performance growth in Pakistan.

Third, as Nomran et al. (2018) claim, examining the relationships between the SSBs and the IBs performance among countries that adopt the different regulatory models may provide a better view of the best SG practices for the IBs. Nomran and Haron (2020c) also assert that there is a need for more empirical studies to examine whether the effect of SSB and its characteristics on IBs performance vary between IBs that operate in jurisdictions that adopt different degree of agencies intervention in SG practices.

Hypotheses Development

In this section, we discuss the hypotheses development that will be tested.

Shari'ah Governance Mechanism and Performance

According to Abdelsalam et al. (2016) and Quttainah and Almutairi (2017), SSBs offer an extra possible reduction in agency costs for IBs through organizational moral accountability constraints and shaping managerial behaviour. Farag et al. (2017) state that the SSB might be a solution to the challenge of the second layer agency theory as it engages in actions such as providing advice to the BoD on activities that best suit the objective of societal benefits. The SSB has a supra authority to prevent the BoD from charging interest (*riba*) payments and to avoid doubtful (*gharar*) investments in their products (Mollah and Zaman, 2015). Although economic calculation and the profit concerns of the IBs are allocated to the BoD, the appreciation of the licit character of this profit is allocated to the SSB (Ghayad, 2008). Thus, SSB plays an important role in mitigating agency problems by acting as an additional monitoring mechanism (see, e.g., Abdelsalam et al., 2016; Shibani and De Fuentes, 2017; Quttainah and Almutairi, 2017). Accordingly, SSB is one of the four key stakeholders affecting the financial performance of IBs, besides the management, the ownership and the external auditor (Mohammed and Muhammed, 2017).

A multitude of variables relating to the SSB characteristics such as the SSB size, cross-membership, doctoral qualification, reputation, and expertise may de-

termine how effective the SSB is in conducting its task (Rahman and Bukair, 2013; Nomran et al., 2018). Given these characteristics, the *Shari'ah* supervision has been measured using different measurements. Mollah and Zaman (2015) employed SSB size as a single proxy of SSB governance. Safiullah and Shamsuddin (2018) utilized SSB index of three SSB characteristics (size, doctoral qualification, and reputation). However, Farook et al. (2011) and Rahman and Bukair (2013) developed a SSB score that captures the total impact of five SSB characteristics, namely, SSB size, cross-membership, doctoral qualification, reputation, and expertise (see Table 1). Recently, Nomran and Haron (2019) used the last score to measure SSB supervision. Similarly, the current study also employs this SSB score as it takes into consideration the impact of all the above SSB characteristics. Thus, the following is proposed:

H_1: Effective SSB, as represented by the SSB score, will be positively related to IBs performance.

SSB Characteristics and Performance

In this section, the authors establish the following hypotheses to explain the relationship between the above mentioned SSB characteristics and bank performance.

SSB Size

Some studies found a negative relationship between SSB size and IBs performance in support of the view that small corporate board size reduces the agency costs according to the agency theory (AGT) (see, Matoussi and Grassa, 2012; Nomran and Haron, 2020a). In contrast, most studies found a positive relationship (see, Mollah and Zaman, 2015; Nomran et al., 2017; Farag et al., 2017; Hakimi et al., 2018; Nomran et al., 2018), in support of the stewardship theory (STD) and the resource dependence theory (RDT) (Nomran et al., 2018). The hypothesis is that:

H_{2a}: SSB size will be positively related to IBs' performance.

SSB Cross-memberships

According to the RDT, the corporate boards provide important resources for firms (Nomran et al., 2018). As such, cross-memberships can elevate the SSB knowledge and understanding regarding the *Shari'ah* practices in Islamic banking industry through discussions among the SSBs (Farook et al., 2011). A positive impact is found for the SSB cross-membership on the performance of IBs (Almutairi and Quttainah, 2017; Nomran et al., 2018). Thus, we state this hypothesis:

H_{2b}: SSB cross-membership will be positively related to IBs performance.

SSB Doctoral Qualification

The RDT assumes that qualified board members play an important role in enhancing the competitiveness of the firms (Gabrielsson and Huse, 2005). SSB member with a doctoral qualification is expected to be better-versed in Islamic Finance and Banking fields (Rahman and Bukair, 2013; Nomran et al., 2018). Basically, SSBs qualifications are important for decision-making (Almutairi and Quttainah, 2017). SSB members with advanced academic qualifications could improve their ability to operationalize Islamic principles into banking practices (Safiullah and Shamsuddin, 2018). Empirically, Almutairi and Quttainah (2017) found a positive relationship between the SSB doctoral qualification and performance of IBs. Here, the hypothesis is:

H_{2c}: SSB educational qualification will be positively related to IBs performance.

SSB Reputation

The presence of reputable SSB scholars on an IB's SSB is conducive for effective *Shari'ah* monitoring as they are well-placed to reduce the operational risk resulting from *Shari'ah* non-compliance (Safiullah and Shamsuddin, 2018). This is in line with the RDT view that assumes the corporate boards provide important resources for firms (Nomran et al., 2018). Thus, IBs with reputable SSB members are often expected to earn higher profit (Almutairi and Quttainah, 2017; Nomran et al., 2018). Empirically, Nomran et al. (2018) found a positive effect for the SSB reputation on the Malaysia IBs financial performance. Hence, the following hypothesis is:

H_{2d}: SSB reputation will be positively related to IBs performance.

SSB Expertise

SSB members with accounting, finance and/or economics knowledge or practice can positively affect the IB performance (Almutairi and Quttainah, 2017; Nomran et al., 2018). Therefore, the presence of SSB with experience in such field is important for IBs. Many IBs have replaced their whole SSBs because the scholars have limited knowledge and exposure to both the *Shari'ah* principles and product knowledge (Bakar, 2016). Following the studies of Almutairi and Quttainah (2017), Nomran et al. (2017), and Nomran et al. (2018), we hypothesise that:

H_{2e}: SSB expertise will be positively related to IBs' performance.

Figure 2 presents the study conceptual framework, whereas Table 1 provides a summary on the study hypotheses and the expected signs of the relationships.

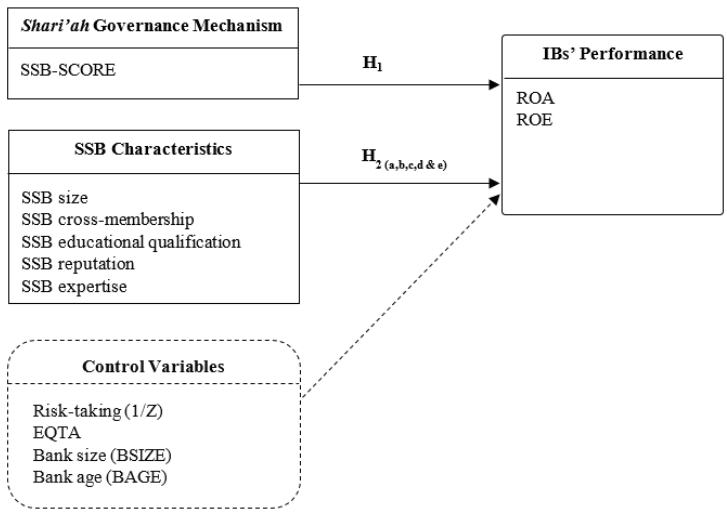

Figure 2. Conceptual framework of independent and dependent variables.

Data and methodology

Sample

The sample used in this study is 11 IBs operating in Pakistan over the period from 2007 to 2015 with 67 observations. Based on the BankScope database in 2016, the number of listed IBs in Pakistan was 11, and therefore, the study sample seems to be fairly representative because it includes almost all IBs in Pakistan. The data is merged from BankScope and hand collected from the annual reports of IBs for the sample period.

Measures of Variables

In this study, the dependent variable, which is the performance, is measured by two proxies, namely, return on assets (ROA) and return on equity (ROE) following the literature (see, e.g. Matoussi and Grassa, 2012; Hakimi et al., 2018; Nomran et al., 2017).

Table 1 presents the measurements of the explanatory variables, which are *Shari'ah* supervision and the SSB characteristics following the studies of Farook et al. (2011) and Rahman and Bukair (2013). Similarly, Table 1 shows the measure-

ments of the control variables (1/Z, EQTA, BSIZE and BAGE) following the literature (see, e.g., Mollah and Zaman, 2015).

Table 1.
Variables, measurement, hypothesis and expected signs

Variables	Definitions and coding	Measurement	Hypothesis
Dependent variables (bank performance)			
ROA	Return on assets	Net income divided by average total assets	
ROE	Return on equity	Net income divided by average total equity	
Explanatory variables			
SSB-SCORE	*Shari'ah* supervision score	SSB-SIZE+SSB-CRMEMP+SSB-DQ+SSB-REPUT+SSB-EXPER*	H1 (+)
SSB-SIZE	SSB size	N of scholars on the SSB	H2a (+)
SSB-CR-MEMP	SSB cross-membership	% of scholars who sit on other SSBs	H2b (+)
SSB-DQ	SSB educational qualification	% of scholars who have PhD degree	H2c (+)
SSB-REPUT	SSB reputation	% of scholars who sit on SSB of AAOIFI & at least two SSBs	H2d (+)
SSB-EXPER	SSB expertise	% of scholars with accounting/economic/finance knowledge	H2e (+)
Bank specific variables:			
1/Z	The risk-taking variable	1/Z is estimated as 1/log Z-score**	
EQTA	Level of protection afforded to the bank by the equity	Equity to total asset	
BSIZE	Bank Size	Log of total assets	
BAGE	Bank Age	N of years since the bank was established	

Notes: * The SSB score sums the value of the dichotomous characteristics of the SSB, namely (SSB size: "1" for banks with 5 or more members & "0" otherwise), (SSB cross-membership: "1" if at least one SSB scholar with cross-membership & "0" otherwise), (SSB educational qualification: "1" if at least one SSB scholar with PhD & "0" otherwise), (SSB reputation: "1" if at least one SSB scholar sits on the SSB of AAOIFI and at least two *Shari'ah* board memberships & "0" otherwise) & (SSB expertise: "1" if at least one SSB scholar with experience and knowledge in the field of accounting/economic/finance & "0" otherwise). ** Z-score measures the distance to default, which is estimated as ROA plus capital to asset ratio divided by standard deviation of ROA (see, Mollah and Zaman, 2015).

Estimation method and models

This study follows the same approach adopted by the existing empirical studies on the relationship between SG mechanism and performance of IBs. The study employs the pooled ordinary least square (OLS) and random-effects (RE-GLS) methods followed by system-GMM for a robustness check. The GMM method is used following the recent studies of Pathan (2009), Nomran et al. (2017) and Hakimi et al. (2018), in which they first used the GLS-RE and checked the robustness of the results by using the GMM method while pooled OLS is used followed by the system-GMM as employed by Mnasri (2015) and Oseni (2016).

The dynamic panel model using the system-GMM is employed to confirm the results of OLS and GLS-RE. System-GMM solves the problem of endogeneity as compared to the static and OLS models (Mnasri, 2015; Oseni, 2016). GMM can address the endogeneity issue that exists in CG and performance studies in general (Haron, 2016; Haron, 2018) and more specifically in the SG and performance studies (Nomran et al., 2018). A one-step system-GMM is applied in the study following many studies (see, e.g., Tan, 2016; Hakimi et al., 2018). Hakimi et al. (2018) suggest using the one-step system-GMM estimator when the sample size is small. In their study, they used GLS-RE and one-step system-GMM to analyze a small sample of 13 IBs over 6 years with 91 observations.[3]

To test the hypotheses based on static models, the following models are employed:

$$\text{PERFORMANCE}_{it} = \beta_{0,i} + \beta_1 \text{SSB-SCORE}_{it} + \beta_2 1/Z_{it} + \beta_3 \text{EQTA}_{it} + \beta_4 \text{BSIZE}_{it} + \beta_5 \text{BAGE}_{it} + \varepsilon_{it} \quad \text{..... (1a)}$$

$$\text{PERFORMANCE}_{it} = \beta_{0,i} + \beta_1 \text{SSB-SIZE}_{it} + \beta_2 \text{SSB-CRMEMP}_{it} + \beta_3 \text{SSB-DQ}_{it} + \beta_4 \text{SSB-REPUT}_{it} + \beta_5 \text{SSB-EXPER}_{it} + \beta_6 1/Z_{it} + \beta_7 \text{EQTA}_{it} + \beta_8 \text{BSIZE}_{it} + \beta_9 \text{BAGE}_{it} + \varepsilon_{it} \quad \text{.....(2a)}$$

3 Mnasri (2015) also used OLS, fixed effects and system-GMM to analyse a sample of 10 banks. Recently, Oyewumi et al. (2018) examined the effects of corporate social responsibility (CSR) investment and disclosure on performance using panel data set from 12 Nigerian banks with 60 observations. Many existing studies on the SG and IBs performance used a small sample size such as Kusuma and Ayumardani (2016) and Wahyudi et al. (2018) who used 11 IBs over five years.

Further, the following models are related to GMM estimator.

$$PERFORMANCE_{it} = \beta_{0,i} + \beta_1 PERFORMANCE_{it(-1)} + \beta_2 SSB\text{-}SCORE_{it} + \beta_3 1/Z_{it} + \beta_4 EQTA_{it} + \beta_5 BSIZE_{it} + \beta_6 BAGE_{it} + \varepsilon_{it} \quad \text{(1b)}$$

$$PERFORMANCE_{it} = \beta_{0,i} + \beta_1 PERFORMANCE_{it(-1)} + \beta_2 SSB\text{-}SIZE_{it} + \beta_3 SSB\text{-}CRMEMP_{it} + \beta_4 SSB\text{-}DQ_{it} + \beta_5 SSB\text{-}REPUT_{it} + \beta_6 SSB\text{-}EXPER_{it} + \beta_7 1/Z_{it} + \beta_8 EQTA_{it} + \beta_9 BSIZE_{it} + \beta_{10} BAGE_{it} + \varepsilon_{it} \quad \text{(2b)}$$

where, *i* indicates the IBs (*i*=1,....,11) and *t* indicates the annual time period (*t*=2007,....,2015), PERFORMANCE = performance of IBs, SSB-SCORE = SSB score, SSB-SIZE = SSB size, SSB-CRMEMP = SSB cross-membership, SSB-DQ = SSB educational qualification, SSB-REPUT = SSB reputation, SSB-EXPER = SSB expertise, 1/Z = 1/log Z-score; EQTA = Equity to total asset, BSIZE = Bank size, BAGE = Bank age.

Analysis and Findings

Descriptive Statistics

Table 2 provides the results of descriptive statistics for the variables. As Table 2 presents, the mean of dependent variables (ROA and ROE) are 0.757 and 5.364 respectively. Table 2 also presents that the mean of explanatory variables (SSB-SIZE, SSB-CRMEMP, SSB-DQ, SSB-REPUT, and SSB-EXPER) are (2.487, 0.373, 0.579, 0.139 and 0.621). Further, the mean of SSB-SCORE is 2.667 reflecting almost half the value of the score which is 5, in average. Table 2 provides the results of descriptive statistics for the control variables (1/Z, EQTA, BSIZE, BAGE).

Table 2 also depicts that variables follow a normal distribution based on skewness and kurtosis statistics. All the variables are below the guidelines for skewness and kurtosis (< 3 and < 10, respectively) as suggested by Kline (2005).

Table 2.
Descriptive Statistics of the Variables

Variables	N	Mean	Std. Dev.	Mini-mum	Maximum	Skewness	Kurtosis
Performance variables							
ROA	67	0.757	1.778	-3.030	6.668	0.956	4.915
ROE	67	5.364	10.451	-27.800	32.133	-0.524	4.018
Explanatory variables							
SSB-SCORE	67	2.667	1.136	1.000	5.000	0.198	1.790
SSB-SIZE	67	2.487	1.544	1.000	7.000	0.706	2.708
SSB-CR-MEMP	67	0.373	0.410	0.000	1.000	0.501	1.599
SSB-DQ	67	0.579	0.401	0.000	1.000	-0.208	1.528
SSB-REPUT	67	0.139	0.219	0.000	0.667	1.176	2.850
SSB-EXPER	67	0.621	0.352	0.000	1.000	-0.223	1.655
Bank-specific variables							
1/Z	67	0.989	0.171	0.656	1.291	-0.187	2.835
EQTA	67	0.195	0.188	0.051	0.781	1.839	5.391
BSIZE	67	5.583	0.643	4.505	6.705	-0.058	1.880
BAGE	67	1.169	0.381	0.000	1.869	-0.681	3.987
Notes: N = Number of observations; Number of IBs = 11.							

Correlation

Table 3 presents the Pearson correlation coefficients between the variables. The highest correlation between the variables is between SSB-SCORE and SSB-REPUT (r = 0.77). However, based on Table 3, it is noticed that all the correlation coefficients are less than 0.95, hence, the collinearity between the variables is not a concern, as suggested by Gujarati and Porter (2009).

As Table 3 shows, there are some significant correlations between the variables. The ROA shows a significant correlation with many variables (p = 0.01) such as SSB-CRMEMP, SSB-DQ, SSB-EXPER, EQTA, BSIZE and BAGE. The ROE also has a significant correlation with the SSB-CRMEMP, SSB-DQ, SSB-SCORE, and BAGE (p = 0.01).

Table 3.
Pearson correlations

No	*Variable*	1	2	3	4	5	6	7	8	9	10	11	12
1	ROA	1.00											
2	ROE	0.65[a]	1.00										
3	SSB-SIZE	0.05	0.17	1.00									
4	SSB-CR-MEMP	0.51[a]	0.56[a]	0.15	1.00								
5	SSB-DQ	-0.39[a]	-0.26[b]	-0.30[a]	-0.40[a]	1.00							
6	SSB-REPUT	-0.02	0.17	0.38[a]	0.57[a]	0.12	1.00						
7	SSB-EXPER	0.34[a]	0.11	-0.39[a]	-0.18	-0.19[c]	-0.55[a]	1.00					
8	SSB-SCORE	0.16	0.31[a]	0.70[a]	0.47[a]	-0.01	0.77[a]	-0.40[a]	1.00				
9	1/Z	0.06	-0.01	0.13	-0.14	0.14	0.08	-0.15	0.08	1.00			
10	EQTA	0.57[a]	0.11	-0.29b	0.17	-0.16	-0.18	0.11	-0.19	0.01	1.00		
11	BSIZE	-0.39[a]	0.03	0.42[a]	-0.01	-0.05	0.28[b]	-0.24[b]	0.30[a]	-0.04	-0.73[a]	1.00	
12	BAGE	0.39[a]	0.31[a]	-0.11	-0.09	-0.18[c]	-0.49[a]	0.64[a]	-0.23[b]	0.03	0.00	-0.21[b]	1.00

Notes: [a], [b] and [c] represent correlation are significant at 1%, 5% and 10% respectively. ROA = Return on assets; ROE = Return on equity; SSB-SIZE = SSB size; SSB-CRMEMP = SSB cross-membership; SSB-DQ = SSB educational qualification; SSB-REPUT = SSB reputation; SSB-EXPER = SSB expertise; SSB-SCORE = SSB score; 1/Z = 1/log Z-score; EQTA = Equity to total asset; BSIZE = Bank size; BAGE = Bank age.

Diagnostic Test

As Table 4 presents, no multicollinearity problem is found in the data, as the variance inflation factor (VIF) of variables is less than 10. As a rule of thumb, if the VIF of a variable exceeds 10, that variable is said to be highly collinear (Gujarati and Porter, 2009).

Table 4.
Results of variance inflation factors (VIF)

Test		VIF	VIF
Model	*Variables*	ROA	ROE
(1)	SSB-SCORE	1.17	1.19
	1/Z	1.10	1.09
	EQTA	2.08	2.10
	BSIZE	2.16	2.32
	BAGE	1.27	1.17
(2)	SSB-SIZE	2.51	2.57
	SSB-CRMEMP	3.69	3.92
	SSB-DQ	2.40	2.52
	SSB-REPUT	4.85	4.87
	SSB-EXPER	3.34	3.49
	1/Z	1.18	1.17
	EQTA	2.39	2.53
	BSIZE	2.35	2.48
	BAGE	2.25	2.10

Notes: ROA = Return on assets; ROE = Return on equity; SSB-SCORE = SSB score; SSB-SIZE = SSB size; SSB-CRMEMP = SSB cross-membership; SSB-DQ = SSB educational qualification; SSB-REPUT = SSB reputation; SSB-EXPER = SSB expertise; 1/Z = 1/log Z-score; EQTA = Equity to total asset; BSIZE = Bank size; BAGE = Bank age.

Hypotheses Test

In this part, the results of hypotheses testing are presented in Table 5 and Table 6 based on OLS, GLS-RE and system-GMM models. As Mnasri (2015) argues, estimating such different models is beneficial in order to understand biases that arise from ignoring different aspects of endogeneity.

Results of the First Hypothesis (Model 1)

Table 5 presents the results of first hypothesis testing. For the OLS regression, Table 5 shows that the overall R^2 for all the measurements (ROA, ROE), are relatively

high (Model (1a)-Panel A: 0.63, 0.30) which indicates that the model is appropriate and the chosen parameters are good estimators of performance. Based on the OLS results, SSB-SCORE is found to positively affect the ROA and ROE (Significance level = 0.05, 0.05).

Table 5.
Empirical results of OLS, GLS-RE and dynamic GMM-System estimations for (Model 1)

Model	(1a)		(1a)		(1b)	
Hypothesis	H_1		H_1		H_1	
Panel	Panel A: OLS		Panel B: GLS-RE		Panel C: GMM-System	
Variables	ROA	ROE	ROA	ROE	ROA	ROE
SSB-SCORE	0.198**	1.881**	-0.012	0.776	0.612*	1.978**
	(0.033)	(0.025)	(0.873)	(0.533)	(0.082)	(0.027)
1/Z	-0.014***	-0.104**	-0.008***	-0.031	-0.010***	-0.057*
	(0.002)	(0.012)	(0.000)	(0.359)	(0.000)	(0.079)
EQTA	8.218***	28.513***	6.888***	51.292*	7.283***	28.507***
	(0.000)	(0.000)	(0.000)	(0.052)	(0.000)	(0.000)
BSIZE	0.500**	7.774***	3.516	155.166**	0.344***	6.817***
	(0.036)	(0.000)	(0.374)	(0.049)	(0.000)	(0.000)
BAGE	1.478***	8.661***	8.131***	56.978	0.962***	8.432***
	(0.000)	(0.001)	(0.000)	(0.217)	(0.000)	(0.000)
Constant	-5.477***	-57.064***	-5.352*	-138.469**	-3.509***	-51.017***
	(0.001)	(0.000)	(0.080)	(0.017)	(0.000)	(0.000)
Ordinary Least Square (OLS)	Yes	Yes	---	---	---	---
Adjusted R^2	0.631	0.309	---	---	---	---
F-statistic	19.490	6.020	---	---	---	---
Prob (F-statistic)	(0.000)	(0.000)	---	---	---	---

Random Effect GLS	---	---	Yes	*Yes*	---	---
Wald test	---	---	63.530***	2.160*	361.340***	41.380***
p-value x^2	---	---	(0.000)	(0.076)	(0.000)	(0.000)
statistic	---	---	0.376	0.204	---	---
R^2 within	---	---	0.824	0.318	---	---
R^2 between	---	---	0.633	0.266	---	---
R^2 overall	---	---	7.850	2.110	---	---
Hausman test	---	---	(0.164)	(0.833)	---	---
p-value of Hausman test	---	---	---	---	Yes	Yes
Dynamic GMM-System	---	---	---	---	29.800	34.200
Sargan test	---	---	---	---	(0.232)	(0.104)
p-value of Sargan test	---	---	---	---	-2.710***	-2.520**
AR(1) test statistics	---	---	---	---	(0.007)	(0.012)
p-value of AR(1)	---	---	---	---	-0.320	0.300
AR(2) test statistics	---	---	---	---	(0.752)	(0.766)
p-value of AR(2)	---	---	---	---		

Notes: Standard coefficients are presented (p-values in parentheses). ***, ** and * are significant at 1%, 5%, and 10% respectively. The Wald test statistic refers to the null: all coefficients on the Shari'ah supervision and control variables are jointly equal to zero. Significant values of AR(1) show that null hypothesis of no autocorrelation among error terms in first-order autocorrelation is rejected. AR(2) or second-order autocorrelation test refers to the null: no second-order correlation in the residuals. Wald x2 statistics: the test is a way of testing the significance of particular explanatory variables in a statistical model. Sargan test for validity of over-identifying restrictions, distributed as indicated under null. This test of over-identifying restrictions is asymptotically distributed as x2 under the null of instrument validity. The reported t-statistics with GLS-RE estimates are robust to random fixed-effect (after comparing GLS-RE with fixed effects model based on Hausman test which confirms the appropriateness of the GLS-RE estimation). ROA = Return on assets; ROE = Return on equity; SSB-SCORE = SSB score; 1/Z = 1/log Z-score; EQTA = Equity to total asset; BSIZE = Bank size; BAGE = Bank age.

Based on the random-effects GLS, Table 5 shows that regression is well-fitted with an overall R^2 of 0.63, 0.26 for the two measurements (ROA, ROE) with statistically significant Wald chi-square (X^2) statistics. Additionally, the Hausman test confirms the appropriateness of the GLS-RE estimation procedure used in this study for both measurements (ROA, ROE) (Model (1a)-Panel B: p = 0.16, 0.83) (see, Hakimi et al., 2018). However, no significant effect is found for the SSB-SCORE on performance based on GLS-RE estimation.

Table 5 also shows the results of hypotheses testing based on the system-GMM estimation for the model (1b), panel C. The diagnostics tests reported in the Table 5 present that the model is well fitted as AR(1) and AR(2) satisfy the conditions that there is first-order autocorrelation but no second-order, as suggested by the literature (see, e.g., Nadeem et al., 2017). As Table 5 depicts, the model (1b) is well fitted with statistically significant test statistics for the Wald test, indicating that the instruments are valid in the GMM estimation for the two measurements (ROA, ROE) (Model (1b)-Panel C: p = 0.00, 0.00). In addition, the Sargan test does not reject the null hypothesis of correct specification for the two measurements (ROA, ROE) (Model (1b)-Panel C: p = 0.23, 0.10) (see, Hakimi et al., 2018).

Based on the system-GMM findings, SSB-SCORE is found to positively affect the ROA and ROE (Model (1b)-Panel C: Significance level = 0.10, 0.05) which supports the findings based on the OLS.

Results of the Second Hypothesis (Model 2)

Table 6 presents the results of second hypothesis testing. For the OLS regression, Table 6 shows that the overall R^2 for all the measurements (ROA, ROE), are relatively high (Model (2a)-Panel A: 0.80, 0.52) which indicates that the model are appropriate. As the OLS results depict, out of the five SSB characteristics only a positive relationship is found between SSB cross-membership and the two measurements (ROA, ROE) (Significance level = 0.01, 0.01).

Table 6.

Empirical results of OLS, GLS-RE and dynamic GMM-System estimations for (Model 2

Model	(2a)		(2a)		(2b)	
Hypothesis	H_2 (a, b, c, d & e)		H_2 (a, b, c, d & e)		H_2 (a, b, c, d & e)	
Panel	A: OLS		B: GLS-RE		C: GMM-System	
Variables	ROA	ROE	ROA	ROE	ROA	ROE

SSB-SIZE	-0.028	-0.258	-0.042	-0.258	0.054	-0.487
	(0.664)	(0.701)	(0.478)	(0.700)	(0.154)	(0.499)
SSB-CR-MEMP	1.000***	8.981***	0.937***	8.981***	0.086	9.072***
	(0.002)	(0.006)	(0.001)	(0.004)	(0.538)	(0.005)
SSB-DQ	-0.417	0.473	-0.334	0.473	0.107	1.412
	(0.120)	(0.862)	(0.162)	(0.861)	(0.320)	(0.583)
SSB-REPUT	0.125	-0.994	0.223	-0.994	0.119	-0.365
	(0.849)	(0.884)	(0.710)	(0.883)	(0.610)	(0.955)
SSB-EXPER	-0.074	-4.040	-0.098	-4.040	-0.404***	-7.169*
	(0.844)	(0.303)	(0.771)	(0.298)	(0.006)	(0.084)
1/Z	-0.010***	-0.086**	-0.011***	-0.086**	-0.071***	-0.620
	(0.003)	(0.016)	(0.000)	(0.012)	(0.000)	(0.103)
EQTA	8.044***	24.034***	8.543***	24.034***	3.389*	42.098***
	(0.000)	(0.001)	(0.000)	(0.000)	(0.055)	(0.000)
BSIZE	0.649***	8.523***	8.225***	8.523***	0.625***	149.249***
	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
BAGE	1.411***	9.546***	7.151***	9.546***	0.689***	70.490***
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-5.761***	-57.280***	-9.008***	-57.280***	-4.608***	-133.91***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Ordinary Least Square (OLS)	Yes	Yes	---	---	---	---
Adjusted R^2	0.808	0.523	---	---	---	---
F-statistic	26.290	7.830	---	---	---	---
Prob (F-statistic)	(0.000)	(0.000)	---	---	---	---

Random Effect GLS	---	---	Yes	Yes	---	---
Wald test	---	---	289.880***	70.470***	412.600***	90.540***
p-value x^2	---	---	(0.000)	(0.000)	(0.007)	(0.000)
statistic	---	---	0.273	0.168	---	---
R^2 within	---	---	0.976	0.857	---	---
R^2 between	---	---	0.865	0.599	---	---
R^2 overall	---	---	12.100	2.960	---	---
Hausman test	---	---	(0.207)	(0.965)	---	---
p-value of Hausman test						
Dynamic GMM-System	---	---	---	---	Yes	Yes
Sargan test	---	---	---	---	37.250	50.180
p-value of Sargan test	---	---	---	---	(0.203)	(0.108)
AR(1) test statistics	---	---	---	---	-2.070**	-1.680*
p-value of AR(1)	---	---	---	---	(0.039)	(0.094)
AR(2) test statistics	---	---	---	---	0.250	-0.050
p-value of AR(2)	---	---	---	---	(0.806)	(0.958)

Notes: Standard coefficients are presented (p-values in parentheses). ***, ** and * are significant at 1%, 5%, and 10% respectively. The Wald test statistic refers to the null: all coefficients on the SSB characteristics and control variables are jointly equal to zero; Significant values of AR(1) show that null hypothesis of no autocorrelation among error terms in first-order autocorrelation is rejected. AR(2) or second-order autocorrelation test refers to the null: no second-order correlation in the residuals; Wald x2 statistics: the test is a way of testing the significance of particular explanatory variables in a statistical model. Sargan test for validity of over-identifying restrictions, distributed as indicated under null. This test of over-identifying restrictions is asymptotically distributed as x2 under the null of instrument validity. The reported t-statistics with GLS RE estimates are robust to random fixed-effect (after comparing GLS-RE with fixed effects model based on Hausman test which confirms the appropriateness of the GLS-RE estimation). ROA = Return on assets; ROE = Return on equity; SSB-SIZE = SSB size; SSB-CRMEMP = SSB cross-membership; SSB-DQ = SSB educational qualification; SSB-REPUT = SSB reputation; SSB-EXPER = SSB expertise; 1/Z = 1/log Z-score; EQTA = Equity to total asset; BSIZE = Bank size; BAGE = Bank age.

For the GLS-RE, Table 6 shows that regression is well-fitted with an overall R^2 of 0.86, 0.59 for the ROA and ROE with statistically significant Wald chi-square (X^2) statistics. Also, the Hausman test confirms the appropriateness of the GLS-RE estimation procedure used in this study for ROA and ROE (Model (2a)-Panel B: p = 0.20, 0.96). The RE-GLS estimation confirms the findings of OLS estimation on that only a positive relationship is found between SSB cross-membership and the two measurements (ROA, ROE) (Significance level = 0.01, 0.01).

Regarding the system-GMM estimation, Table 6 shows the results of hypotheses testing for the model (2b), panel C. As Table 6 depicts, the diagnostics tests shows that the model is well fitted as AR(1) and AR(2) satisfy the conditions that there is first-order autocorrelation but no second-order. Further, the model is well fitted with statistically significant test statistics for the Wald test, indicating that the instruments are valid in the GMM estimation for the two measurements (ROA, ROE) (Model (2b)-Panel C: p = 0.00, 0.00). Finally, the Sargan test does not reject the null hypothesis of correct specification for the two measurements (ROA, ROE) (Model (2b)-Panel C: p = 0.20, 0.10).

A system-GMM findings confirm that SSB cross-membership is positively related to the ROE (Model (2b)-Panel C: Significance level = 0.01) while no effect is found in terms of ROA. Additionally, it is found that SSB-EXPER is negatively related to ROA and ROE (Model (2a)-Panel B: Significance level = 0.01, 0.10).

Discussion of the Findings

Table 7 provides a summary for the study hypotheses testing and the findings of the study.

Table 7.

Summarized of study hypotheses testing and findings

Panel		A: OLS		B: GLS-RE		C: GMM-System		Hypothesis Testing
Hypothesis	Variables	ROA	ROE	ROA	ROE	ROA	ROE	
H_1 (+)	SSB-SCORE	0.198** (+)	1.881** (+)	0.012 (-)	0.776 (+)	0.612* (+)	1.978** (+)	Supported
H_{2a} (+)	SSB-SIZE	0.028 (-)	0.258 (-)	0.042 (-)	0.258 (-)	0.054 (+)	0.487 (-)	Not Supported
H_{2b} (+)	SSB-CRMEMP	1.000*** (+)	8.981*** (+)	0.937*** (+)	8.981*** (+)	0.086 (+)	9.072*** (+)	Supported
H_{2c} (+)	SSB-DQ	0.417 (-)	0.473 (+)	0.334 (-)	0.473 (+)	0.107 (+)	1.412 (+)	Not Supported
H_{2d} (+)	SSB-REPUT	0.125 (+)	0.994 (-)	0.223 (+)	0.994 (-)	0.119 (+)	0.365 (-)	Not Supported
H_{2e} (+)	SSB-EXPER	0.074 (-)	4.040 (-)	0.098 (-)	4.040 (-)	0.404*** (-)	7.169* (-)	Supported with opposite sign

Note: Standard coefficients are presented. ***, ** and * are significant at 1%, 5%, and 10% respectively. ROA = Return on assets; ROE = Return on equity; SSB-SCORE = SSB score; SSB-SIZE = SSB size; SSB-CRMEMP = SSB cross-membership; SSB-DQ = SSB educational qualification; SSB-REPUT = SSB reputation; SSB-EXPER = SSB expertise.

Based on the findings of the first hypothesis, Table 7 shows that OLS estimation and system-GMM provide almost the same results that SSB supervision has a positive effect on the performance of IBs but with weak significance levels (5 percent and 10 percent). In contrast, the GLS-RE fails to prove any significant relationship between the SSB supervision and the performance.

For the second hypothesis, Table 7 presents that all the three estimations (OLS, GLS-RE, and system-GMM) almost find a positive relationship between the SSB cross-membership and the performance (H_{2b}) for the two measurements (ROA, ROE) with the exception of system-GMM which only supports ROE. In contrast, the system-GMM findings assert that SSB-EXPER is negatively related to ROA and ROE, while the other estimations (OLS and GLS-RE) fail to prove this relationship.

However, given the presence of endogeneity issue in the CG and bank performance studies as mentioned above, a Hausman endogeneity test is conducted following the literature (see, e.g., Mnasri, 2015; Rashid and Jabeen, 2016) as Table 8 presents. Table 8 proves the existence of endogeneity as shown by Durbin-Wu–Hausman tests for the two models (1 and 2). The results reveal that endogeneity is a major concern, confirming the fact that the system-GMM is more appropriate than OLS and GLS-RE estimates[4]. Hence, the findings of dynamic system-GMM are used to test the study hypotheses.

Table 8.

Results of endogeneity test

Model	(1)		(2)	
Variables	ROA	ROE	ROA	ROE
Durbin-Wu–Hausman tests (Endogeneity Test): *H_0: Variables are exogenous* *Ha: There is an endogeneity problem*				
Durbin (score)	6.3889 (0.0115)	7.3658 (0.0066)	4.5043 (0.0338)	5.2820 (0.0215)
Wu-Hausman F	6.3086 (0.0154)	7.4201 (0.0089)	3.8158 (0.0586)	4.4121 (0.0445)

Notes: ROA = Return on assets; ROE = Return on equity. Endogeneity test is conducted following the studies of Rashid and Jabeen (2016) and Mnasri (2015).

4 Thus, the base model is the system-GMM, while the Static models are provided to show all the conducted steps of analysis.

As Table 7 shows, the system-GMM findings indicate that the first hypothesis (H_1) is supported for the two performance measurements (ROA, ROE) (Significance level = 0.10, 0.05). However, the level of significance at (10 and 5 percent), respectively implies that the relationship between SSB supervision and the Pakistani IBs performance is not very strong. The results seem to confirm that of Majeed and Zainab (2018) who found that SSBs in the Pakistani IBs are not performing their roles perfectly.

For the second hypotheses (H_{2a-e}), the system-GMM findings show that two out of the five sub-hypotheses are supported which are the H_{2b} and H_{2e}. As Table 7 presents, SSB cross-membership is found to positively affect the performance only for the ROE while no effect is found in terms of ROA; the H_{2b} hypothesis is, thus, supported for the ROE. This result is in support of Nomran et al. (2018) who found a positive impact for the SSB cross-membership on the Malaysian IBs performance. A possible reason for this, as Nomran et al. (2017) argue, belongs to the restriction of scholars' memberships across SSBs of IBs in Malaysia. As such, Pakistan is among countries that restrict the number of SSB positions a *Shari'ah* scholar can hold (Alkhamees, 2013). This also may justify why the SSB cross-membership is positively related to the Pakistani IBs performance. Table 2 proves the restrictions of SSB cross-membership in the Pakistani IBs as they have a modest SSB cross-membership percentage (37%) on average.

Table 7 also shows that SSB experience is negatively related to ROA and ROE based on the system-GMM. Therefore, the H_{2e} hypothesis is supported for the ROA and ROE, but with a different sign. The negative relationship is in contrast to the H_{2e} hypothesis, where a positive relationship is expected. This result supports the findings of Nomran et al. (2018) who found a negative relationship between SSB experience and the Malaysia IBs performance. According to Table 2, the average of SSB expertise in accounting/finance is high (62%). However, no more information on the percentage of the scholars with *Shari'ah* and law in the Pakistani IBs is found in this study. Therefore, the real reason on why SSB expertise has a negative impact on the performance of IBs in Pakistan is still ambiguous. For this, it is recommended for future research to examine this issue empirically by two steps. First, the descriptive analysis should distinguish in details between scholars who specialized in accounting/finance/economic versus those who specialized in *Shari'ah* and law. This would provide a clear conclusion about the percentage of scholars' specializations in the SSBs. Second, the impact of each category (accounting/finance/economic vs. *Shari'ah* and law) on the IBs should be examined separately in order to

explore which specialization is responsible for the negative effect on performance. Importantly, such research is recommended not only for the Pakistani IBs, but for the Malaysian IBs and the other countries as well.

In contrast, the findings of the system-GMM indicate that the three hypotheses (H_{2a}, H_{2c}, and H_{2d}) which are related to the SSB size, SSB educational qualification, and SSB reputation, respectively, are not supported. These findings are not consistent with many existing studies such as those of Nomran et al. (2017) and Nomran et al. (2018) in which they found a significant impact for these SSB characteristics on IBs performance. This may reflect that SG practices in the Pakistani IBs are still weak as compared to what should be applied.

Based on the above discussion, it can be concluded that the impact of the SSB supervision on the Pakistani IBs performance is not strong enough. This is supported by examining the impact of SSB characteristics (size, cross-membership, educational qualification, reputation and expertise). Out of these five characteristics, only SSB cross-membership and experience positively and negatively affect the performance of Pakistani IBs while the effect is absent for the other three characteristics (size, educational qualification, and reputation). This implies that SG practices in the Pakistani IBs still suffer from some drawbacks which require more improvements by the respective regulators. In general, the current SG practices across jurisdictions still suffer from some drawbacks especially in the regulatory frameworks relating to the SSB's roles (Grassa, 2015). For example, IBs are subject to different regulations under which they operate and this resulted in different resolution. For instance, some jurisdictions restrict the SSB cross-membership while some others give allowance to it. Therefore, it is still questionable whether such resolution is beneficial in enhancing the SSB effectiveness and IBs performance or not (Nomran and Haron, 2020b).

This conclusion is in consistent with the findings of Majeed and Zainab (2017) who found that the role of SSBs in the Pakistani IBs is not up to the mark, and this role cannot be improved without ensuring the availability of adequate human capital. They added that SSBs in the Pakistani IBs cannot play their true role until IBs have separate central bank. Majeed and Zainab (2018) also found that SSBs in the Pakistani IBs not performing their roles well and one of the reasons lies in the absence of comprehensive regulatory framework. Although Mollah and Zaman (2015) provided support for the positive contribution of *Shari'ah* supervision for IBs across countries, they also emphasized the need for enforcement and regulatory mechanism for them to be more effective. Regarding this, the regulatory fra-

mework that the Pakistani authorities apply may be blamed for the SG weakness[5]. For example, Table 2 shows that the average of SSB size is very small in Pakistan (2.48) as compared to other different countries such as Malaysia (4.8) (see, Nomran et al., 2018). To ensure effective board performance, it is argued that the SSB size should comprise between three and seven members as suggested by Rahman and Bukair (2013) or between three and six members as suggested by Nomran and Haron (2020a). Similarly, the average of SSB reputation is modest (13%) (see Table 2). The regulatory framework therefore should cover this gap by imposing more qualified scholars in the SSBs for IBs.

Pakistan adopts an interventionist regulatory model which gives third party institution the authority to take decision on *Shari'ah* issues related to the Islamic finance, as well as there is national SSB at the State Bank of Pakistan level. Under these circumstances, the regulators may give more attention to the *Shari'ah* supervision at the national level and neglect that on the institutional level (SSB at IBs). Thus, the Pakistani regulators should give more power to the SSBs at the institutional level in order to make related decisions.

However, a concern is also raised regarding the role of SSBs in Pakistani IBs whether it is advisory or supervisory. Mollah and Zaman (2015) found that SSBs positively affect IBs' performance when they perform a supervisory role but the impact is negligible when they have only one advisory role. Future research, hence, should examine this issue empirically to explore if the role of SSBs is advisory or supervisory and how can this affect the performance of banks. Furthermore, future research should examine the relationship between SSB and regular boards of directors (BoD) under the Pakistani interventionist regulatory approach, and how these boards together can affect the performance of IBs. This may show to what extent SSB is given a power as compared to the BoD under such approach.

Conclusion and Implications

The unique Islamic banking business model imposes some unique agency issues for IBs besides the common agency problems that occur between managers

5 According to Grassa (2015), Pakistani law neglects discussing the composition of SSB at institutional level, instead it discusses that each IB in Pakistan should only have a Shari'ah Advisor. In contrast, there are many details regarding the composition of the national SSB in Pakistan such as its size which should consist of at least five members (at least 2 members of them have to be Shari'ah scholars, 1 member to be a Chartered Accountant, 1 a lawyer while 1 representing the bankers and the State Bank of Pakistan).

and shareholders. For this, the governance structure of IBs includes the SSB besides the BoD, which acts as additional governance mechanism affecting the IBs performance.

As a response to the rapid growth of IBs, many countries develop different SG regulatory models to regulate the Islamic banking and finance activities. One of these countries is Pakistan which adopts a unique interventionist regulatory approach. This approach differs from the other adopted approaches in the other countries that have either high or low degrees of regulatory interference. Generally, the relationship between *Shari'ah* supervision and IBs' performance is still ambiguous particularly for banks across countries that have a different regulatory environment. As such, there is no empirical study that has examined the relationship between SSB and IBs performance in Pakistan. Thus, the current study aims to fill the literature gap by examining how SSB mechanism and its characteristics can influence IBs performance in Pakistan. The performance-governance relationship is estimated using a range of econometric techniques including a dynamic system-GMM estimator for a sample comprises 11 IBs for the period from 2007 to 2015.

Conducting this study is important as there is a need to evaluate the current SG practices in Pakistan. This would help to explore the strengths and drawbacks points of the Pakistani regulatory framework which will help in improving the current framework. Additionally, it would be interesting to empirically explore to what extent the existence of SSB contributes to the IBs performance growth in Pakistan.

The findings reveal a modest support for a positive association between *Shari'ah* supervision and performance. It is also found that SSB cross-membership and experience; are positively and negatively related to the performance of Pakistani IBs, respectively. The study concludes that SG practices in the Pakistani IBs still suffer from some drawbacks which require more improvements by the respective regulators. The regulatory framework that the Pakistani authorities apply may be blamed for these weaknesses. It seems that the regulators have given more attention to the *Shari'ah* supervision at the national level as compared to that on the institutional level (SSB at IBs). An obvious indicator for this inference is the small SSB size and the modest percentage of reputable scholars in the SSBs in the Pakistani IBs. Further, the absence for any significant impact for many SSB characteristics as the study depicted.

The findings of this study would help the respective regulators in Pakistan to improve the current SG practices especially when the State Bank of Pakistan has

taken numerous initiatives to enhance Islamic banking, including improving SG practices. Thus, this study suggests some important practical implications for regulators in Pakistan. First, regulators should give more power to the SSBs at the institutional level in order to make related decisions. Second, the regulatory framework should impose IBs to have large SSB size and more qualified scholars in the SSBs for IBs.

However, more research is needed to justify the negative relationship between SSB experience and the performance of not only for IBs in Pakistan but also for IBs across countries. Future research should also examine whether the role of SSBs is advisory or supervisory and how can this affect the IBs performance in Pakistan. Finally, there is a need for research on the relationship between SSB and BoD under the Pakistani interventionist regulatory approach, and how these boards together can affect the performance of IBs.

References

Abdelsalam, O., Dimitropoulos, P., Elnahass, M. & Leventis, S. (2016). Earnings management behaviors under different monitoring mechanisms: The case of Islamic and conventional banks. *Journal of Economic Behavior & Organization*, 132(1) ,155-173.

Alkhamees, A. (2013). The impact of *Shari'ah* governance practices on *Shari'ah* compliance in contemporary Islamic finance, *Journal of Banking Regulation,* 14(2), 134-163.

Almutairi, A. R. & Quttainah, M. A. (2017). Corporate governance: evidence from Islamic banks. *Social Responsibility Journal,* 13(3), 601-624.

Bakar, M. D. (2016). Shariah Minds in Islamic Finance. Kuala Lumpur: Amanie Media.

Farag, H., Mallin, C. & Ow-Yong, K. (2017). Corporate governance in Islamic banks: new insights for dual board structure and agency relationships. *Journal of International Financial Markets, Institutions and Money,* 54(1), 59-77.

Farook, S., Hassan, K. & Lanis, R. (2011). Determinants of corporate social responsibility disclosure: The case of Islamic banks. *Journal of Islamic Accounting and Business Research,* 2(2), 114 – 141.

Gabrielsson, J. & Huse, M. (2005). Outside directors in SME boards: a call for theoretical reflections. *Corporate Board: role, duties and composition*, 1(1), 28-37.

Ghayad, R. (2008). Corporate governance and the global performance of Islamic banks. H*umanomics,* 24(3), 207-216.

Grais, W., & Pellegrini, M. (2006). *Corporate governance and Shari'ah compliance in institutions offering Islamic financial services* (policy working paper no. 4054/2006). World Bank.

Grassa, R. (2013). *Shari'ah* supervisory system in Islamic financial institutions: New issues and challenges: a comparative analysis between Southeast Asia models and GCC models. *Humanomics,* 29(4), 333-348.

Grassa, R. (2015). *Shari'ah* supervisory systems in Islamic finance institutions across the OIC member countries: An investigation of regulatory frameworks. *Journal of Financial Regulation and Compliance*, 23(2), 135-160.

Gujarati, D. & Porter, D. (2009). *Basic Econometrics,* New York: McGraw-Hill.

Hakimi, A., Rachdi, H., Ben Selma Mokni, R., & Hssini, H. (2018). Do board characteristics affect bank performance? Evidence from the Bahrain Islamic banks. *Journal of Islamic Accounting and Business Research,* 9(2), 251-272.

Haron, R. (2016). Do Indonesian firms practice target capital structure? A dynamic approach. *Journal of Asia Business Studies,* 10(3), 318-334.

Haron, R. (2018). Firm level, ownership concentration and industry level determinants of capital structure in an emerging market: Indonesia evidence. *Asian Academy of Management Journal of Accounting and Finance* (AAMJAF), 14(1), 1-23.

Hasan, Z. (2011). A survey on *Shari'ah* governance practices in Malaysia, GCC countries and the UK: Critical appraisal. *International Journal of Islamic and Middle Eastern Finance and Management*, 4(1), 30-51.

Hasan, Z. (2012). *Shari'ah Governance in Islamic banks.* United Kingdom: Edinburgh University Press.

Hasan, Z. B. (2010). Regulatory framework of *Shari'ah* governance system in Malaysia, GCC Countries and the UK. *Kyoto Bulletin of Islamic Area Studies*, 3(2), 82–115.

Hassan, R., Abdullah, N. I., Hassan, A., Ibrahim, U., Sawari, M. F., Aziz, A. A., & Triyanta, A. (2013). A Comparative Analysis of *Shari'ah* Governance in Islamic

Banking Institutions Across Jurisdictions (ISRA Research Paper no. 50). *International Shari'ah Research Academy for Islamic Finance (ISRA)*, Kuala Lumpur.

Khan, I., Khan, M., & Tahir, M. (2017). Performance comparison of Islamic and conventional banks: empirical evidence from Pakistan. *International Journal of Islamic and Middle Eastern Finance and Management*, 10(3), 419-433.

Kline, R. B. (2005). *Principle and practice of structural equation modeling.* New York: Guilford.

Kusuma, H., & Ayumardani, A. (2016). The corporate governance efficiency and Islamic bank performance: an Indonesian evidence. *Polish Journal of Management Studies*, 13(1), 111-120.

Majeed, M. T., & Zainab, A. (2017). How Islamic is Islamic banking in Pakistan?. *International Journal of Islamic and Middle Eastern Finance and Management*, 10(4), 470-483.

Majeed, M. T., & Zainab, A. (2018). Sharia'h practice at Islamic banks in Pakistan. *Journal of Islamic Accounting and Business Research,* 9(3), 274-289.

Matoussi, H. & Grassa, R. (2012). Is corporate governance different for Islamic banks? A comparative analysis between the Gulf Cooperation Council Context and the Southeast Asia Context (working paper no. 734). T*he Economic Research Forum, 18th annual conference,* Egypt.

Mnasri, K. (2015). Ownership Structure, Board Structure and Performance in The Tunisian Banking Industry. *Asian Academy of Management Journal of Accounting & Finance*, 11(2), 57-82.

Mohammed, S. A. S. A. & Muhammed, D. J. (2017). Financial crisis, legal origin, economic status and multi-bank performance indicators: Evidence from Islamic banks in developing countries. *Journal of Applied Accounting Research*, 18(2), 208-222.

Mollah, S. & Zaman, M. (2015). *Shari'ah* supervision, corporate governance and performance: conventional vs. Islamic banks. *Journal of Banking and Finance,* 58(1), 418-435.

Nadeem, M., Gan, C. & Nguyen, C. (2017). Does intellectual capital efficiency improve firm performance in BRICS economies? A dynamic panel estimation. *Measuring Business Excellence,* 21(1), 65-85.

Nomran, N. M., & Haron, R. (2019). Dual board governance structure and multi-bank performance: a comparative analysis between Islamic banks in Southeast Asia and GCC countries. *Corporate Governance: The International Journal of Business in Society,* 19(6), 1377-1402.

Nomran, N. M., & Haron, R. (2020a). *Shari'ah* supervisory board's size impact on performance in the Islamic banking industry. *Journal of Islamic Accounting and Business Research*. 11(1), 110-129.

Nomran, N. M., & Haron, R. (2020b). *Shari'ah* Governance for Islamic Banking: Evidence from Diverse Regulatory Environments. In A. Rafay (Ed.), *Growth and Emerging Prospects of International Islamic Banking*. Pennsylvania, US : IGI Global. Retrieved from https://www.igi-global.com/book/growth-emerging-prospects-international islamic/233690

Nomran, N. M., & Haron, R. (2020c). A Systematic Literature Review on *Shari'ah* Governance Mechanism and Firm Performance in Islamic Banking. *Islamic Economic Studies*. 27(2), 91-123.

Nomran, N. M., Haron, R. & Hassan, R. (2017). Bank performance and *Shari'ah* supervisory board attributes by Islamic banks: Does bank size matter?. *Journal of Islamic Finance,* (Special Issue), 173-186.

Nomran, N. M., Haron, R. & Hassan, R. (2018). *Shari'ah* Supervisory Board Characteristics Effects On Islamic Banks' Performance: Evidence from Malaysia. *International Journal of Bank Marketing*, 36(2), 290-304.

Oseni, I. O. (2016). Exchange rate volatility and private consumption in Sub-Saharan African countries: A system-GMM dynamic panel analysis. *Future Business Journal*, 2(2), 103-115.

Oyewumi, O. R., Ogunmeru, O. A., & Oboh, C. S. (2018). Investment in corporate social responsibility, disclosure practices, and financial performance of banks in Nigeria. *Future Business Journal,* 4(2), 195-205.

Pathan, S. (2009). Strong boards, CEO power and bank risk-taking. *Journal of Banking & Finance,* 33(7), 1340-1350.

Quttainah, M. A., & Almutairi, A. R. (2017). Corporate ethics: evidence from Islamic banks. *Journal of Management and Governance,* 21(4), 815-840.

Rahman, A. A. & Bukair, A. A. (2013). The influence of the Shariah supervision board on corporate social responsibility disclosure by Islamic banks of Gulf

Co-operation Council countries. *Asian Journal of Business and Accounting*, 6(2), 65-104.

Rashid, A., & Jabeen, S. (2016). Analyzing performance determinants: Conventional versus Islamic banks in Pakistan. *Borsa Istanbul Review*, 16(2), 92-107.

Safiullah, M. & Shamsuddin, A. (2018). Risk in Islamic banking and corporate governance. *Pacific-Basin Finance Journal*, 47(1), 129–149.

Shibani, O., & De Fuentes, C. (2017). Differences and similaritites between corporate governance principles in Islamic banks and Conventional banks. *Research in International Business and Finance*, 42(3), 1005-1010.

Tan, Y. (2016). The impacts of risk and competition on bank profitability in China", *Journal of International Financial Markets*. *Institutions and Money,* 40 , 85-110.

Wahyudi, S., Nofendi, D., Robiyanto, R., & Hersugondo, H. (2018). Factors affecting return on deposit (ROD) of sharia banks in Indonesia. *Business: Theory and Practice,* 19, 166-176.

Zahid, S. N. & Khan, I. (2019). Islamic corporate governance: the significance and functioning of *Shari'ah* supervisory board in Islamic banking. *Turkish Journal of Islamic Economics,* 6(1), 87-108.

Zainuldin, M. H., Lui, T. K. & Yii, K. J. (2018). Principal-agent relationship issues in Islamic banks: a view of Islamic ethical system. *International Journal of Islamic and Middle Eastern Finance and Management,* 11(2), 297-311.