# Bank Performance and *Shari'ah* Supervisory Board Attributes of Islamic banks: Does Bank Size Matter?

Naji Mansour Nomran[a]*, Razali Haron[b], Rusni Hassan[c]

*[a] Thamar University, Yemen*
*[a,b*,c] IIUM Institute of Islamic Banking and Finance (IIiBF)*
*Corresponding author: hrazali@iium.edu.my*

## Abstract

This study aims to provide new empirical evidence on whether the impact of *Shari'ah* Supervisory Board (SSB) characteristics on Islamic Banks (IBs) performance can be affected by the size of the bank by using a sample of 25 banks for the period from 2007 to 2015. Six SSB characteristics were employed as explanatory variables which are (size, cross-membership, educational qualification, reputation, experience and change in the composition). By employing random-effects GLS and GMM method for a robustness check, it is found that four SSB characteristics (size, cross-membership, educational qualification and change in the composition) significantly affect the performance of IBs when the full sample is examined. However, the findings vary when the sample is divided into two subsamples, large and small bank. Four SSB characteristics (size, cross-membership, reputation and experience) are found to play an important role in enhancing the performance of large IBs while only (reputation and experience) significantly affect the performance of small IBs. This confirms that the impact of SSB characteristics on performance concentrates more on large IBs as compared to the small banks. Thus, there is a lack of *Shari'ah* governance practices in the small IBs in Malaysia and Indonesia as compared to the large banks.

Keywords: Shari'ah Supervisory Board, Shari'ah governance, Islamic banks, Performance, Bank size.

## 1. Introduction

The Islamic Banks (IBs) practice a different governance structure from the conventional banks (CBs) as they are obliged to abide by the *Shari'ah* principle with the existence of *Shari'ah* compliant activities and the *Shari'ah* Supervisory Boards (SSBs). As such, necessary alterations have been made by adding into another layer to the governance from "single-layer" as in the conventional ones into "multi-layer" governance (Mollah and Zaman, 2015; Bukair and Rahman, 2015; Nomran *et al*., 2018). This is the result of the fact that the operation mechanisms of IBs are following the Islamic principles (Grassa, 2013a). IBs is basically operating based on profit and loss (risk-sharing) model as opposed to interest-based (*riba'*) as in the CBs (Mollah and Zaman, 2015). In this respect, the *Shari'ah* governance (SG) is defined as a system that controls, guides and directs the SSBs to ensure compatibility with *Shari'ah* rules (Grassa, 2013a).

Aiming at instilling loyalty and trust among their customers, the IBs must make sure they are constantly in compliance with the *Shari'ah* rules and principles with regards to their products and daily operation (Grais and Pellegrini, 2006). Hence, SG acts as a cornerstone in ensuring *Shari'ah* compliance of the IBs (Zulkafli *et al*., 2010). Therefore, it is immensely important for the SSBs members to fully grasped and understand the *Shari'ah* requirement regarding product innovation and daily business operations to ensure adherence to the *Shari'ah* (Hassan *et al*., 2011). It is the main responsibility of the SSB to closely supervise the implementation of the *Shari'ah* principles throughout the operations of IBs. The SSB has the power to object to any operation or activities which are not conforming to the *Shari'ah* rules since the Board of Directors (BoD) itself is subjected to the SSB's discretion (Musibah and Alfattani, 2014). Failing to provide proper and efficient *Shari'ah* supervision may pose serious effects to the IBs and

consequently to the Islamic Finance industry as a whole (Grassa, 2013a). Failing to comply with *Shari'ah* rules, may result in losing depositors as they may cancel their investment thus may create and elevate risks to the IBs. This will consequently lead to losing customers' confidence thus poses negative image to the IBs (Hamza, 2013; Grassa, 2015b).

Zahra and Pearce (1989) argue that some internal factors such as firm size do have significant impact on how corporate board influences firm performance. Board provides essential monitoring tool specifically to large firms with complex activities and need careful integration. In the SSB context, Alman (2012) examines the impact of SSB characteristics (size, cross-membership with top twenty rankings scholars and the annual changes in the composition) on risk taking of small versus large IBs. He documents that risk-taking of large banks are more impacted by the SSB characteristics comparative to the smaller ones. This is because large IBs carry better reputations which capture the interest of the scholars in conducting their tasks compared to smaller IBs. Literature documents several SSB characteristics such as SSB size, doctoral qualification, reputation, cross-membership and expertise may influence the efficiency of the SSB (Farook and Lanis, 2007; Farook *et al.*, 2011; Rahman and Bukair, 2013). To date, very little study has been done on whether size of the bank affects the influence of SSB characteristics on IBs performance. Mollah and Zaman (2015) investigates the impact of one of the SSB characteristics which is size on IBs performance. They find that SSB size has positive impact on large banks comparative to small banks. Responding to the scarcity of such examination, this study aims to examine the extent to which size of the bank has any influence on how the SSB characteristics impact IBs performance.

The paper is organized as follows. The first section overviews related literature and the hypotheses development. The second presents the data and methodology while the third discusses the empirical result. The last section concludes the whole study.

## 2. Hypotheses Development

Literature shows a lack of studies investigating the impact of SG on the performance of IBs (Nathan, 2010; Mollah and Zaman, 2015; Nomran *et al.*, 2018). It is argued that factors affecting the BoD may also affect SSB since the roles of the BoD, audit committee and SSB are the same (Rahman and Bukair, 2013). The SG structure and the conventional board structure seem to be the same (Bhatti and Bhatti, 2010). Furthermore, the CG theories such as the agency theory (AGT), stewardship theory (STD) and resource dependence theory (RDT) can be extended to explain the impact of SSB characteristics on IBs performance as documented by the literature (see, for examples., Farook *et al.*, 2011; Alman, 2012; Quttainah *et al.*, 2013; Nomran *et al.*, 2018).

### 2.1 SSB size
The AGT suggests with small BoD size, agency costs may be reduced and the coordination between the board members may be increased (Quttainah *et al.*, 2013). Small BoD size also facilitates better communication thus decisions making can be more effective (Yermack, 1996). However, contrastingly the STD and RDT believe that large BoD is better than small board (Quttainah *et al.*, 2013). Jensen (1993) argues that there should be at least seven or eight people in the BoD to ensure effective performance. As for the SSB, small SSB is much easier to manage and monitor comparative to large SSB. There is also an argument supporting large SSB as large SSB may consist of scholars with various experience and skills and schools of *fiqh* which may then lead to a better interpretation of the products and operation thus ultimately better performance (Hamza, 2016). Few empirical evidences confirm significant impact of SSB size on IBs performance like Matoussi and Grassa (2012), Mollah and Zaman (2015) and Nomran *et al.* (2018). Thus, this study hypothesizes that:

$H_1$: *IBs performance will be positively associated with SSB size.*

### 2.2 SSB cross-membership
SSB cross-directorship or directors sitting on more than one board is one of the most discussed issues in CG studies (Haniffa and Cooke, 2002). The RDT suggests that the BoD provides the important resources for firms (Hillman and Dalziel, 2003), a cross-membership creates an interlock between directors that can bridge the management with external environment. Monitoring and disseminating information can be

carried out through the interlock of the directors. Thus, interlocking board members can be considered as a source of information on the activities and policies of the other firms (Haniffa and Hudaib, 2006). Furthermore, cross-membership is also an important characteristic of SSBs in IBs (Rahman and Bukair, 2013) since most of SSB scholars sit on several boards of different IBs at the same time (Grassa, 2015a). Cross-memberships can also elevate the SSB knowledge and understanding regarding the *Shari'ah* law practices in Islamic banking industry through exposures and discussions among the SSBs (Farook and Lanis, 2007; Farook *et al*., 2011). Familiar names and faces among the scholars in the SSB help in attracting new customers, thus enhances the productivity and the efficiency of the IBs (Grassa, 2015a). Nevertheless, there are arguments that cross-memberships of SSB members may have conflicts of interest as they have access to proprietary information (Nathan Garas, 2012) thus gives a negative impact on the board effectiveness (Alman, 2012; Nomran *et al*., 2018). Therefore, this study hypothesizes that:

> *H₂: IBs performance will be positively associated with SSB cross-membership.*

### 2.3 SSB educational qualification

Well educated board members enhance board quality and can positively deal with any new challenges (Hambrick and Mason, 1984; Kakabadse *et al*., 2010). Therefore, firm performance is positively related to board members with good qualification (Haniffa and Cooke, 2002; Cheng *et al*., 2010). These qualified board members are seen as strategic resource to enhance competitiveness (Ingley and Van der Walt, 2001; Gabrielsson and Huse, 2005) which is in line with the RDT (Johnson *et al*., 1996). With regards to the SSB, better qualified SSB may lead to higher profitability (Musibah and Alfattani, 2014). SSB member with a doctorate degree is expected to be better-versed in Islamic Finance and Banking fields (Farook and Lanis, 2007; Farook *et al*., 2011; Rahman and Bukair, 2013; Nomran *et al*., 2018). Nonetheless, there are scholars without any academic qualification or degree or even in *Shari'ah*-related studies (Bakar, 2016). Thus it is hypothesized that:

> *H₃: IBs performance will be positively associated with SSB educational qualification.*

### 2.4 SSB reputation

The RDT views BoD as information and skills provider to the firm (Hillman and Dalziel, 2003; Abdullah and Valentine, 2009), hence can improve the performance (Pfeffer, 1972) and leads to good reputation to the firm (Pfeffer and Salancik, 2003). Good reputation represents human capital which has an immensely important role in enhancing firm performance besides experience and education (Clarysse *et al*., 2007). Thus, there is a link between reputable directors and firm performance (Withers *et al*., 2012). Similarly, there is also a link a between reputable SSB members and IBs performance. Researchers claim that reputation represents industry knowledge therefore it is expected that reputable SSB members can perfectly comprehend the current environment of the Islamic banking (see, for examples, Farook and Lanis, 2007; Farook *et al*., 2011; Nomran *et al*., 2018). Hence, this study hypothesizes that:

> *H₄: IBs performance will be positively associated with SSB reputation.*

### 2.5 SSB expertise

The corporate board according to the RDT provides the important resources for firms (Hillman and Dalziel, 2003) such as experience (Abdullah and Valentine, 2009) thus improves the performance of companies (Pfeffer, 1972). As for the SSB, scholars with financial knowledge and experience can perform effectively as compared to those without these capabilities (Rahman and Bukair, 2013). Normally, the SSB members in IBs are mostly Islamic scholars. Nevertheless, not all are with accounting, banking, economic and finance expertise (Abdullah *et al*., 2014) thus, may affect their credibility regarding financial products and activities (Ginena and Hamid, 2015). On that account, due to limited expertise on both the *Shari'ah* principles and product knowledge, many SSB in the IBs have been replaced as they could not function well due to the limitation (Bakar, 2016). SSB scholars with knowledge in both accounting and finance as well as in *Shari'ah* law can enhance the performance of IBs (Matoussi and Grassa, 2012; Grassa, 2015a; Nomran *et al*., 2018). Thus, the fifth hypothesis is that:

$H_5$: *IBs performance will be positively associated with SSB expertise.*

## 2.6 Change in the SSB composition

The come and go in a board composition in a year represents a change in the board members (Eisenberg *et al*., 1998; Fox and Opong, 1999). This scenario brings in new members to the board who is usually highly motivated with new experience, knowledge and insights (Al-Matari *et al*., 2014). Change in the board composition is translated into fresh and dynamic views and opinions from new experts and qualified directors. Generally, the change in the board may be because the firm needs to enhance firm effectiveness by the new members with better qualification in some fields (Fox and Opong, 1999). The RDT sees board composition as essential resources to survive and grow while the AGT sees it as how the management dominates the board thus a change in a board is done in a way to preserve capitalist interests (Zahra and Pearc, 1989). In the SSB context, changes in the SSB represent the entry and exit of scholars during a year. Alman (2012) finds evidence that annual change in the composition of SSBs positively influences the risk-taking of IBs. He argues that in a change that takes place, the new SSB members are those who can bear more risk-taking interests of the BoD and shareholders. Based on the above argument, the hypothesis for this variable is that:

$H_6$: *IBs performance will be positively associated with the annual change in SSB composition.*

## 3. Data and methodology

### 3.1 Sample

Due to data availability limitations, this study uses a sample of 25 IBs with 16 banks from Malaysia and 9 from Indonesia over the period of 2007-2015. The 25 IBs is divided into two sub-samples; large and small banks. To do so, large/small banks are defined as those with higher/lower than median asset-size following the study of Mollah and Zaman (2015). The data are extracted from different sources, like the BankScope database and hand-collected data on the SSB characteristics from IBs annual reports.

### 3.2 Measures of dependent and explanatory variables

Following prior studies, the dependent variable, which is the performance, is measured by two proxies, namely, return on assets (ROA) and return on equity (ROE) (see, for examples, Musibah and Alfattani, 2014; Grassa and Matoussi, 2014; Mollah and Zaman, 2015; Nomran *et al*., 2018). ROA is calculated by dividing net income by total assets while ROE by dividing net income by total equity (Naceur, 2003; Musibah and Alfattani, 2014; Nomran *et al*., 2018). Laeven and Levine (2009) claim that using different proxies would confirm the findings.

The explanatory variables used in this study are measured as the following. SSB size is the total number of scholars on the SSB of the IBs at the end of each year while SSB cross-membership is measured by the percentage of SSB members who sit on the SSBs of different IFIs at the same time. SSB expertise is measured as the percentage of SSB members with accounting/finance knowledge (see, for examples, Matoussi and Grassa, 2012; Grassa and Matoussi, 2014; Grassa, 2015a; Nomran *et al*., 2018). SSB educational qualification is measured by the percentage of SSB members with PhD degree and SSB reputation is measured by the percentage of SSB members who sit on the board of AAOIFI and also have at least one *Shari'ah* board memberships in other IFIs at the same time (see, for examples, Farook and Lanis, 2007; Farook *et al*., 2011; Rahman and Bukair, 2013; Nomran *et al*., 2018). This is due to that the *Shari'ah* board of AAOIFI is the highest *Shari'ah* board in the world by affiliation to AAOIFI. It is comprised of highly reputable *Shari'ah* scholars who represent, to a large extent, the best *Shari'ah* minds of both the Islamic world and Islamic Finance (Bakar, 2016). Finally, to measure the annual changes in total composition of the SSBs, a dummy variable is used (1 if the SSB composition in total changed annually and 0 otherwise) (Alman, 2012; Nomran *et al*., 2018). The full descriptions of the explanatory variables are in Table 1.

Table 1 Explanatory variables, measurement, hypothesis and expected signs

| Explanatory variables | Measurement | Hypothesis |
|---|---|---|
| SSB size | N of scholars on the SSB | $H_{1\ (+)}$ |
| SSB cross-membership | % of scholars who sit on other SSBs | $H_{2\ (+)}$ |
| SSB educational qualification | % of scholars who have PhD degree | $H_{3\ (+)}$ |
| SSB reputation | % of scholars who sit on board of AAOIFI & at least another SSB | $H_{4\ (+)}$ |
|  | % of scholars with accounting/ finance knowledge |  |
| SSB expertise | Dummy (1 if the SSB composition in total changed annually and 0 | $H_{5\ (+)}$ |
| Change in the SSB composition | otherwise) | $H_{6\ (+)}$ |

## 3.3 Estimation method and model

This study employs the random-effects GLS method following recent studies (Pathan, 2009; Mollah and Zaman, 2015; Mollah *et al*., 2016; Haron and Adewale, 2016). This method is suitable for CG studies because the OLS ignores the panel structure of the data. The time-invariant parameter like religion cannot be estimated with fixed-effect (Mollah *et al*., 2016). However, for a robustness check of our findings, this study also employs the generalized method of moments (GMM) method in order to solve the potential endogeneity issue. This issue needs to be controlled due to potential reverse-causality between boards and firm performance (Azim and Taylor, 2009). Studies on the impact of CG on performance should control for endogeneity especially in the corporate board size variable as BoD size itself is influenced by firm characteristics, and thereby GMM can be used to control for this issue (see for examples, Pathan and Faff, 2013; Haron, 2016; Haron, 2017).

To test the hypotheses, the following models are employed:

$$PERFORM_{it} = \beta_{0\ it} + \beta_1\ SSB\text{-}SIZE_{it} + \beta_2\ SSB\text{-}CRMEMP_{it} + \beta_3\ SSB\text{-}DQ_{it} + \\ \beta_4\ SSB\text{-}REPUT_{it} + B_5\ SSB\text{-}EXPER_{it} + \beta_6\ SSB\text{-}ANCH_{it} + \\ \beta_7\ BSIZE_{it} + \beta_8\ BAGE_{it} + \varepsilon_{it} \tag{1}$$

$$PERFORM_{it} = \beta_0\ PERFORM_{it(-1)} + \beta_1\ SSB\text{-}SIZE_{it} + \beta_2\ SSB\text{-}CRMEMP_{it} + \\ \beta_3\ SSB\text{-}DQ_{it} + \beta_4\ SSB\text{-}REPUT_{it} + B_5\ SSB\text{-}EXPER_{it} + \\ \beta_6\ SSB\text{-}ANCH_{it} + \beta_7\ BSIZE_{it} + \beta_8\ BAGE_{it} + \varepsilon_{it} \tag{2}$$

The variables for the model are:
PERFORM = performance of IBs, SSB-SIZE = SSB size, SSB-CRMEMP = SSB cross-membership, SSB-DQ = SSB educational qualification**,** SSB-REPUT = SSB reputation, SSB-EXPER = SSB expertise, SSB-ANCH = change in the SSB composition, BSIZE = bank size, BAGE = bank age.

## 4. Analysis and Findings

### 4.1 Descriptive statistics

The results of descriptive statistics for the variables are shown in Table 2. With respect to the dependent variables, the study finds that for the full sample, the mean ROA and ROE are 0.65% and 9.13%, respectively. The Table shows that the mean size of SSB is 4.09, ranging from 2 to 9 scholars. However, Mollah and Zaman (2015) find similar mean size of SSB (4.17) but ranging from 1 to 14 for a sample of 86 IBs across 25 countries. For the other variables, the mean for the SSB cross-membership (CRMEMP) is 0.48, SSB educational qualification (DQ) is 0.76, SSB reputation (SSBR) is 0.04, SSB expertise (EXPER) is 0.50 and change in the SSB composition (TCH) is 0.38.

Table 2 Descriptive statistics (full sample)

| Variables | N | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| *Performance variables* | | | | | |
| ROA | 185 | 0.6564 | 1.3751 | -14.0420 | 3.2020 |
| ROE | 185 | 9.1311 | 9.7919 | -32.6500 | 63.1450 |
| *(SSB) characteristics* | | | | | |
| SSB-SIZE | 185 | 4.0973 | 1.5077 | 2.0000 | 9.0000 |
| SSB-CRMEMP | 185 | 0.4860 | 0.3197 | 0.0000 | 1.0000 |
| SSB-DQ | 185 | 0.7671 | 0.2120 | 0.1667 | 1.0000 |
| SSB-REPUT | 185 | 0.0482 | 0.1456 | 0.0000 | 1.0000 |
| SSB-EXPER | 185 | 0.5020 | 0.3246 | 0.0000 | 1.0000 |
| SSB-ANCH | 185 | 0.3838 | 0.4876 | 0.0000 | 1.0000 |
| *Bank-specific variables* | | | | | |
| BSIZE | 185 | 6.3652 | 0.6105 | 4.7270 | 7.5911 |
| BAGE | 185 | 1.0407 | 0.4537 | -0.3010 | 1.8261 |

**Notes**: This table presents for the full sample the descriptive statistics for the variables. $N$ = Number of observations; Number of IBs = 25; ROA = Return on asset; 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-ANCH = Annual change in the SSB composition; BSIZE = Bank size; BAGE = Bank age.

## 4.2 Diagnostic test

To check the existence of the multicollinearity issue, Variance Inflation Factor (VIF), as an indicator of multicollinearity, is used. Gujarati and Porter (2009) state, as a rule of thumb, if the variance inflation factor (VIF) of a variable exceeds 10, which will happen if $R^2j$ exceeds 0.90, that variable is said to be highly collinear. Multicollinearity test in the data set is performed and no multicollinearity problem is found in the data, as the VIF of variables is less than 10 for all the models (see Table 3). Hence, there is no concern of multicollinearity among the set of explanatory variables.

Table 3 Variance inflation factor for variables (VIF)

| Panel | A: Full Sample | | B: Large IBs | | C: Small IBs | |
|---|---|---|---|---|---|---|
| Variables | (1) ROA | (2) ROE | (1) ROA | (2) ROE | (1) ROA | (2) ROE |
| SSB-SIZE | 2.80 | 2.82 | 1.88 | 1.88 | 2.22 | 2.27 |
| SSB-CRMEMP | 1.25 | 1.26 | 1.68 | 1.68 | 1.44 | 1.45 |
| SSB-DQ | 1.17 | 1.17 | 1.41 | 1.41 | 1.61 | 1.60 |
| SSB-REPUT | 1.19 | 1.19 | 1.4 | 1.4 | 1.35 | 1.35 |
| SSB-EXPER | 1.25 | 1.24 | 1.67 | 1.67 | 1.39 | 1.40 |
| SSB-ANCH | 1.16 | 1.15 | 1.19 | 1.19 | 1.14 | 1.13 |
| BSIZE | 2.62 | 2.64 | 2.01 | 2.01 | 1.90 | 1.91 |
| BAGE | 1.15 | 1.17 | 1.45 | 1.45 | 1.83 | 1.84 |

**4.3 Tests of hypotheses**
Table 4 presents the regression results examining the effect of SSB characteristics on IBs performance based on random-effects GLS and GMM methods.

*4.4.1 Random-effects GLS*
For the random-effects GLS, Table 4 shows that the overall $R^2$ for all the models (1-2), are relatively high (Panel A: 0.14, 0.29; Panel B: 0.25, 0.18; Panel C: 0.28, 0.33) which indicates that the models are appropriate and the chosen parameters are good estimators of performance.

   Based on the random-effects GLS, for the first panel (A: full sample), out of the six SSB characteristics only a negative relationship is found between SSB cross-membership and performance for all the two models (1-2) ($p = 0.01, 0.01$). Similarly, for the second panel (B: large bank size), the same negative relationship is found between SSB cross-membership and performance for all the two models (1-2) ($p = 0.00, 0.01$). Finally, for the third panel (C: small bank size), a negative relationship is found between SSB reputation and performance for all the two models (1-2) ($p = 0.03, 0.03$) and a negative relationship is found between SSB expertise and the performance but only for the first model (1) ($p = 0.04$).

*4.4.2   Generalized Method of Moments (GMM)*
For a robustness check, Table 4 also shows the regression results examining the effect of SSB characteristics on performance based on GMM method. The diagnostics tests show that all the models are well fitted with statistically insignificant test statistics for both the second-order autocorrelation in second differences (AR(2)) and the Hansen *J*-statistics of over-identifying restrictions and statistically significant for the Wald test. Accordingly, the models fit and diagnostics in the Table 5 show the desirable statistically insignificant AR (2) for the two models (1-2) respectively (Panel A: $p = 0.66, 0.97$; Panel B: $p = 0.99, 0.93$; Panel C: $p = 0.99, 0.96$). In Table 4, the Hansen *J*-statistics indicate that the instruments are valid in the GMM estimation as the level of significance for the two models (1-2) are more than 5% (Panel A: $p = 0.27, 0.57$; Panel B: $p = 0.34, 0.30$; Panel C: $p = 0.12, 0.33$).

   As Table 4 shows, the GMM method provides better result as compared to the random-effect method. This may be due to the endogeneity issue that arises in such studies. For the first panel (full sample) based on the GMM, four SSB characteristics (size, cross-membership, educational qualification and change in the composition) are found to significantly affect the performance of IBs. A positive relationship is found between SSB size and performance for the two models (1-2) ($p = 0.02, 0.02$). This positive relationship indicates that IBs with large SSB size tend to perform better. However, it is important to mention that the mean size of SSB is 4, ranging from 2 to 9 scholars as Table 2 shows. By looking at the data for the whole sample, it can be said that SSB size range between 2 and 6. The data presents that there is no SSB size of 8 at all while there are only two observations that have SSB size of 9 during 2014 and 2015 (CIMB Islamic Bank from Malaysia). In addition, out of the 180 observations in the sample, only six observations that show a SSB size of 7. The SSB cross-membership is reported to relate positively to performance for the two models (1-2) ($p = 0.00, 0.00$), in support of Nomran *et al*. (2018). This is in contrast to the GLS findings in which a negative relationship is found. This result can perhaps be explained by the positive impact for the cross-memberships of SSB scholars on the board effectiveness. However, a possible justification for this positive impact is related to the restriction of scholars' memberships across SSBs of IBs. Malaysia and Indonesia are among the countries that have restricted the numbers of membership for scholars in SSBs (Grassa, 2013b; Grassa, 2015b; Nomran *et al*. 2018).

   Regarding the SSB educational qualification, the coefficients are negatively related to performance for the two models (1-2) ($p = 0.00, 0.07$), in line with the finding of Nomran *et al*. (2018). It is believed that despite higher level academic qualifications are important for SSB scholars of Malaysian and Indonesian IBs, the negative impact may reflect that there is a need for SSB scholars with PhD in other specific skills such as accounting and finance. Based on Table (2), the percentage of SSBs scholars with PhD degree for the whole sample is 76%, on average. On the other hand, only 50%, on average, of scholars are with accounting and finance knowledge and, of course, not all of them have PhD degrees. Most of those scholars have PhD degrees in *Shari'ah* and law while there is a shortage in the number of scholars who have PhD in accounting and finance. Finally, a significant negative relationship between the change in SSB composition and performance is found for the second model (2) ($p = 0.00$). A possible reason for this negative relationship is that the SSB composition that may be changed as a result of a new appointment or some form of removal such as the resignation, retirement and death which may deprive the firm of a

valuable member. Besides these, the composition of a SSB is associated with more risk-taking by IBs as achieving the economic goals of banks requires more permissive SSB scholars than restrictive scholars (Alman, 2012). As Table (2) presents, the percentage of annual change in SSB composition for the whole sample is 38%, on average.

However, Table 4 shows that the findings vary when the sample is divided into two sub-samples, large and small bank. For the second sample (large IBs), four SSB characteristics (size, cross-membership, reputation and experience) are found to significantly affect the performance of large IBs. A negative relationship is found between SSB size and performance of large IBs for the two models (1-2) ($p = 0.00$, 0.00). This negative relationship indicates that large IBs with large SSB size do not seem to perform better at least for the largest IBs in Malaysia and Indonesia. However, this result is not consistent with the findings of Mollah and Zaman (2015), who find a positive impact for SSB size on the performance of large IBs. A possible reason for this difference in the sign may be because of the sample size which is 25 IBs across 2 countries in our study as opposed to 86 IBs across 25 countries in the study of Mollah and Zaman (2015). In addition, this study employs only ROA and ROE to measure performance. The same negative relationship is found between SSB cross-membership and the performance of large IBs for the two models (1-2) ($p = 0.00$, 0.00). This indicates that cross-memberships of SSB members have a negative impact on the performance of large IBs. This is in line with the view of Alman (2012) and Nathan-Garas (2012) who believe that cross-memberships of SSB members have a negative impact on the SSB effectiveness, and then, leads to the conflicts of interest as they have access to proprietary information.

SSB reputation is reported to relate negatively to performance of large IBs for the two models ($p = 0.01$, 0.06). This negative relationship can be justified as a result of the high cross-membership among the reputable scholars across IBs. In 2010, there are twelve AAOIFI scholars who sit on almost 40 % of all SSBs in IFIs (Ünal, 2011). In the GCC countries, for example, three popular names sit on 26% of all the SSBs (Grassa, 2013a). Hence, as many observers argue, such cross-membership may have a negative impact on the board effectiveness (see, for example, Nathan-Garas, 2012). In fact, the significant impact for the reputable scholars and performance of large IBs is expected due to these banks reputations. According to Alman (2012), large IBs have better reputations which make scholars become more interested in conducting their tasks in such banks as compared to small IBs. Finally, a positive relationship is found between the SSB expertise and performance of large IBs for the first model (1) ($p = 0.06$). However, an important question here is whether the restriction of scholars' membership by the Malaysian and Indonesian legal authorities include reputable scholars or not especially as most of them are from different countries.

This means that SSB characteristics (size, cross-membership, reputation and experience) play an important role in enhancing the performance of large IBs in Malaysia and Indonesia. The findings indicate that as the SSBs with smaller size, lesser cross-membership for scholars, lesser reputable scholars but even with more scholars with accounting and finance knowledge perform less compared to large IBs.

In contrast, for the third sample (small IBs), a negative relationship is found between SSB reputation and performance for the two models (1-2) ($p = 0.06$, 0.04) and a positive relationship is found between SSB expertise and the performance for the two models (1-2) ($p = 0.02$, 0.03). This implies that the SSB characteristics (reputation and experience) are important for the small IBs. As the SSBs have more reputable scholars and have less scholars with accounting and finance knowledge; small IBs perform better. This is to say that there is a lack of *Shari'ah* governance practices in the small IBs in Malaysia and Indonesia as compared to the large banks.

Table 4 *Shari'ah* supervisory board characteristics and IBs performance (large vs. small banks)

| Panel | A: Full Sample | | | | B: Large IBs | | | | C: Small IBs | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Method | RE-GLS | | GMM | | RE-GLS | | GMM | | RE-GLS | | GMM | |
| Variables | (1) ROA | (2) ROE | (1) ROA | (2) ROE | (1) ROA | (2) ROE | (1) ROA | (2) ROE | (1) ROA | (2) ROE | (1) ROA | (2) ROE |
| ROA (-1) | -- | -- | 0.467*** (0.000) | -- | -- | -- | 0.234** (0.025) | -- | -- | -- | -0.066 (0.864) | -- |
| ROE (-1) | -- | -- | -- | 0.265*** (0.000) | -- | -- | -- | -0.310** (0.016) | -- | -- | -- | 0.110 (0.540) |
| SSB-SIZE | -0.055 (0.641) | 0.201 (0.779) | 0.912** (0.024) | 12.000** (0.029) | 0.359 (0.378) | -0.844 (0.363) | -0.395*** (0.002) | -3.745*** (0.000) | -0.081 (0.786) | 1.500 (0.704) | 0.029 (0.912) | 6.459 (0.242) |
| SSB-CRMEMP | -0.908** (0.013) | -6.287** (0.016) | 3.397*** (0.002) | 20.18*** (0.009) | -0.923*** (0.006) | -9.070** (0.010) | -1.725*** (0.001) | -35.50*** (0.001) | 0.761 (0.501) | -4.970 (0.114) | 0.636 (0.519) | 10.445 (0.588) |
| SSB-DQ | -0.440 (0.400) | -3.902 (0.273) | -3.045*** (0.000) | -12.953* (0.074) | 0.175 (0.803) | 4.860 (0.292) | -0.432 (0.684) | -6.379 (0.752) | 0.442 (0.747) | -4.863 (0.355) | -1.921 (0.396) | 2.400 (0.787) |
| SSB-REPUT | -0.502 (0.521) | -8.922 (0.155) | 5.175 (0.144) | 18.122 (0.355) | -2.325 (0.114) | -2.999 (0.830) | -13.96** (0.018) | -137.88* (0.066) | -4.018** (0.039) | -11.61** (0.038) | 3.765* (0.061) | 41.702** (0.046) |
| SSB-EXPER | 0.038 (0.913) | -1.318 (0.652) | -3.080 (0.365) | 1.662 (0.904) | -0.224 (0.656) | 1.779 (0.624) | 2.463* (0.064) | 11.741 (0.439) | -2.398** (0.040) | -2.753 (0.375) | -9.507** (0.024) | -49.55** (0.038) |
| SSB-ANCH | 0.318 (0.332) | -1.799 (0.155) | -0.256 (0.130) | -4.263*** (0.001) | 0.229 (0.343) | 1.432 (0.432) | -0.043 (0.601) | 1.762 (0.144) | -0.573 (0.261) | -2.142 (0.246) | 0.215 (0.293) | 3.231 (0.200) |
| BSIZE | 0.724*** (0.007) | 7.188*** (0.000) | 27.277** (0.016) | 17.904* (0.059) | 0.940*** (0.006) | 12.58*** (0.001) | 0.287 (0.818) | 40.622** (0.015) | -4.269 (0.304) | 48.42*** (0.002) | -1.098 (0.425) | -4.425 (0.881) |
| BAGE | 0.038 (0.869) | -0.598 (0.752) | -7.787*** (0.000) | -58.71*** (0.000) | 0.227 (0.346) | -0.834 (0.742) | -0.642 (0.397) | -66.61*** (0.002) | -0.926 (0.123) | 1.201 (0.621) | -1.731 (0.391) | -30.967 (0.316) |
| Constant | -3.096** (0.037) | -28.94** (0.010) | -- | -- | -5.835*** (0.008) | -72.38*** (0.002) | -- | -- | 7.324 (0.314) | -74.11** (0.011) | -- | -- |
| Random Effect GLS | Yes | Yes | -- | -- | Yes | Yes | -- | -- | Yes | Yes | -- | -- |
| Overall R2 | 0.144 | 0.295 | -- | -- | 0.258 | 0.183 | -- | -- | 0.289 | 0.337 | -- | -- |
| Wald Chi2 | 25.99*** | 38.32*** | -- | -- | 29.54*** | 20.67*** | -- | -- | 21.25*** | 30.43*** | -- | -- |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GMM | -- | -- | Yes | Yes | -- | -- | Yes | Yes | -- | -- | Yes | Yes |
| AR(1) test statistics (*p*-value) | -- | -- | -1.554* | -0.111** | -- | -- | -0.050 | -0.090** | -- | -- | -0.002** | -0.125** |
| | -- | -- | (0.081) | (0.040) | -- | -- | (0.959) | (0.024) | -- | -- | (0.014) | (0.021) |
| AR(2) test statistics (*p*-value) | -- | -- | 0.428 | 0.033 | -- | -- | 0.007 | -0.085 | -- | -- | 0.001 | -0.039 |
| | -- | -- | (0.668) | (0.973) | -- | -- | (0.993) | (0.932) | -- | -- | (0.999) | (0.968) |
| Wald (joint) $\chi^2$ | -- | -- | 4.89*** | 10.15*** | -- | -- | 24.14*** | 8.58*** | -- | -- | 21.26*** | 9.63*** |
| *J*-statistic | -- | -- | 18.838 | 14.366 | -- | -- | 7.848 | 8.325 | -- | -- | 9.998 | 6.806 |
| (*p*-value) | -- | -- | (0.277) | (0.571) | -- | -- | (0.346) | (0.304) | -- | -- | (0.124) | (0.339) |
| N. of observations | 185 | 185 | 147 | 147 | 101 | 101 | 82 | 82 | 81 | 84 | 63 | 65 |

**Notes**: The GMM model includes one lag of the dependent variables. ***, ** 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; AR(2) or second-order autocorrelation test refers to the null: no second-order correlation in the residuals; the *J*-test statistic refers to the null: instrumental variables are valid. ROA = Return on asset; 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-ANCH = Annual change in the SSB composition; BSIZE = Bank size; BAGE = Bank age. The values in parentheses are the p-values.

Table 5 provides a summary for the six hypotheses tested across the three different panels. It shows that four hypotheses are supported when the full sample is examined but with different signs. The first and second hypotheses are supported with positive signs as expected while the third and sixth hypotheses are supported but with, the opposite, negative signs.

Table 5. Summary of hypotheses testing

| Panel | A: Full Sample | B: Large IBs | C: Small IBs |
|---|---|---|---|
| *Hypothesis* | *Result & sign* | *Result & sign* | *Result & sign* |
| $H_1$ | Supported (+) | Supported (-) | - - - |
| $H_2$ | Supported (+) | Supported (-) | - - - |
| $H_3$ | Supported (-) | - - - | - - - |
| $H_4$ | - - - | Supported (-) | Supported (+) |
| $H_5$ | - - - | Supported (+) | Supported (-) |
| $H_6$ | Supported (-) | - - - | - - - |

As Table 5 presents, four hypotheses are supported when the second sample (large bank size) is examined. The first, second and fourth hypotheses are supported but with, the opposite signs, negative signs while the fifth hypothesis is supported with a positive sign as expected. In contrast, only two hypotheses are supported when the the third sample (small bank size) is examined. The fourth hypothesis is supported with a positive sign as expected while the fifth one is supported but with, the opposite sign, negative.

## 5. Conclusion

The governance structure of IBs is different from their conventional counterparts as a result of the existence of the SSBs besides the usual boards such as the BODs. This study aims to provide new empirical evidence on whether the impact of SSB characteristics on IBs performance can be affected by bank size using a sample of 25 banks for the period from 2007 to 2015. Six SSB characteristics were employed as explanatory variables which are (size, cross-membership, educational qualification, reputation, experience and change in the composition). The findings indicate that four SSB characteristics (size, cross-membership, educational qualification and change in the composition) significantly affect the performance of IBs when the full sample is examined.

The findings vary when the sample is divided into two subsamples, large and small bank. Four SSB characteristics (size, cross-membership, reputation and experience) are found to play an important role in enhancing the performance of large IBs in Malaysia and Indonesia. The findings indicate that small SSBs size with less cross-membership for scholars, less reputable scholars and more scholars with accounting and finance knowledge perform less than large IBs. In contrast, the findings indicate that two SSB characteristics (reputation and experience) significantly affect the performance of small IBs. As the SSBs have more reputable scholars and have less scholars with accounting and finance knowledge; small IBs perform better.

Hence, it is suggested for small Malaysian and Indonesian IBs to give due importance to *Shari'ah* governance practices as size is an important element for improving their performance. Regulators also should impose special regulation on small IBs to take care of the *Shari'ah* governance practices. However, this study has limitation. The study employs a small sample by focusing only on the IBs in Malaysia and Indonesia. Hence, it is recommended that future research should take this point into consideration and use large sample from different countries.

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