The Empirical Linkages of Shariah Corporate Governance and Intellectual Capital: Evidence of Islamic Banks

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Abstract

Using an unbalanced panel dataset of 59 Islamic banks (IBs) worldwide for the period of 2006-2017, the principal aim of this study is to examine the impact of Shariah corporate governance mechanisms through the characteristics of Shariah board on intellectual capital (IC) efficiency. The characteristics of Shariah board members are represented through the size of the Shariah board (SBSIZE), the proportion of Shariah board members who have financing or accounting expertise (SBEXP), the number of Shariah board meetings held in a year (SBMEET), the proportion of female members on the Shariah board (SBFEM) and diversity in terms of Shariah board members' nationalities (SBNAT). IC efficiency as the dependent variable has been measured using value added intellectual coefficient (VAIC). This study provides an empirical evidence showing that SBSIZE exerts significant positive impact on IC efficiency. This study also examines the impact of Shariah corporate governance mechanisms on IC components namely HCE, SCE and CEE and found that SBEXP exerts positive significant impact to HCE and SCE while no significant impact to CEE. In epitome, the empirical results emerging from this study render theoretical and managerial implications to banking industry especially for Islamic banking since the intellectual capital notion as well as the empirical studies on Shariah governance still relatively new. Paying attention on the results, it is interesting to note that Shariah board also plays a pivotal role in accelerating IC efficiency which in turn heading towards a better performance of IBs.

Keywords: *intellectual capital; Islamic banks; Shariah corporate governance; VAIC..*

1. Introduction

With the surging contour of knowledge-based economy, has precipitated the organisations nowadays to stop relying merely on physical capital in accelerating their organisational performance. Having said that, the notion of intellectual capital or intangible assets is thrust into prominence since it also can boost the performance even though it is less highlighted as compared to contribution of physical capitals. The significance of intellectual capital (IC) on financing performance is important to be cognisant which can directly sustain the competitive advantage [1] owing to its characteristics which are rare and inimitable as explicated in resource-based view theory. Kamath (2007)[2] briefly explained that the organisation which comprises of creative, skilful and

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knowledgeable employees conjointly with supportive organisational systems and structures as well as preserves good customer relations will helps in achieving better organisational position, thence, that is why, it is very essential to understand and study whether the intellectual capital is efficiently utilised in creating added value for organisation or vice versa.

In light of the importance of intellectual capital, there is a plethora of studies that examining the impact of intellectual capital on performance across different sectors and regions [3],[4],[5] and most of the studies found the positive linkages between intellectual capital and organisational performance. Notwithstanding, there are scantiness of studies that examining on what are the possible factors that can give impact to IC efficiency even though the intellectual capital management should be identified beforehand. Correspondingly, there are numbers of studies that investigate the linkages between corporate governance via the board of directors'(BOD) characteristics and intellectual capital efficiency [2],[6],[7] because as highlighted by Keenan and Aggestam [8]corporate governance through the role of BOD plays a key role to create, develop and leverage IC that embedded in the people, processes and structures within organisation. In essence, BOD are being mandated to ensure that the managers employing the IC resources efficiently.

This present study is focusing on Islamic banking sector since the study on corporate governance and IC efficiency is still underexplored despite the fact that the nature of Islamic banks is to develop innovative products that comply with *Shariah*. This nature has lead them to possess high knowledgeable employees and efficient system especially to keep competitive and relevant in banking industry. Having different CG structure with conventional banks, for Islamic banks, there is an introduction of *Shariah* board that assisting the main board of directors in ensuring that the banking practices are in line with *Shariah* principles. As the *Shariah* board also plays a key role in CG structure in Islamic banks, thus this study address the gap of governance notion by seeking the impact of *Shariah* corporate governance through the characteristics of *Shariah* board on IC efficiency. The findings will be of great importance in order for the Islamic banks to consider the characteristics of *Shariah* board that can give positive impacts on IC efficiency which will directly contribute to a better performance as well. So far, to the best of authors' knowledge, this is among the first attempts to investigate the impact of *Shariah* governance on IC efficiency.

The study is organised as follows; the next section provides a nuanced view on *Shariah* governance, intellectual capital concept in regard of definitions, components and VAIC method in calculating IC efficiency as well as reviews the related preceding literatures on *Shariah* governance and intellectual capital in order to develop hypotheses of study. The subsequent section outlines the sample of study and regression models. The next section lays and discusses the empirical regression results and the final part includes the concluding remarks based on the results of this study.

2. Literature review

2.1 *Shariah* corporate governance in banking institutions

Islamic banking keeps up its hefty momentum to be aligned with the long-established conventional banking by showing an expeditious progression year by year. This meteoric expansion of Islamic economy has remarkably reached a size of US$4 trillion [9]. Notably in this twenty-first-century, Islamic banking is not a peculiar subject therein banking sector in which Islamic banking flourishingly garnered a big number of customers. Acts as a financial intermediary, Tiby, Mohamed, and Grais [10] pinpointed that, Islamic bank has pledged to provide the financial services to customers in accordance with a code of behaviour solely based on Islamic values. They also stressed on the exigency of public trust since the financial services are substantially an information-based industry. Therefore, in order to ensure the vibrancy of Islamic banks by inculcating the public confidence towards them, a sufficing regulatory framework and effective supervision is very much needed. It is because the stakeholders particularly, always set high expectation for the bank to carry out the overall operations in compliance with *Shariah* principles and indeed, to satisfy the stakeholders, a good corporate structure is pivotal since it allows the bank to implement good governance to perform *Shariah*-compliant operations effectively [10]. Ghoniyah and Hartono [12] conducted a study on the impact of *Shariah* corporate governance on SME's later found that it is able to improve the well-being of society. To sum up, a tacit impact of *Shariah* governance to society has been proved by past researchers.

The supremacy of *Shariah* governance framework seemly because of the establishment of in-house religious advisors famously known as *Shariah* board. Hasan [13] added some points on *Shariah* board members' functions as being advisory and supervisory which demanding them to not merely giving advice, approving and reviewing products, but they also have to conduct training as well as enhancing the Islamic banking knowledge to the employees in Islamic banks [14]. To add up, *Shariah* board serves as the additional layer of corporate governance to monitor, oversight the Islamic banking operations, in which adjoining with the board of directors and operational committees. The presence of *Shariah* board makes the governance structure turns into 'multi-layer' governance as the common 'single-layer' solely comprises of the board of directors and functional committees. Additionally, *Shariah* board may keep the BOD and management under control from taking high risk investments or engaging themselves in aggressive lending activities [15].

2.2 Intellectual capital

Itami [16] considered intellectual capital as the intangible assets which comprises of customer information, brand name, technology, reputation and organisational culture that are valuable to the competitive power of organisation. Adopt a broader picture of IC definition, the millennial researches come out with slightly different interpretation as compared to preceding literatures. For instance, Meles, Porzio, Sampagnaro, and Verdoliva [17] defined intellectual capital as the intangible asset that constituted of knowledge and know-how that confer the competitive advantage over other competitors as well as portray the organisation itself. Meanwhile, Mention [18] in his attempt to provide precise definition of IC stated that IC is *"a set of internal and external resources (human, process, IT-based or enabled) that* organisation*s mobilize and articulate, through activities,*

with other resources (financial and tangible) in order to further generate resources, which can be of tangible, intangible or financial nature, in their pursuit of competitive advantage". Despite the numerous definitions of IC, in essence, IC can be defined as the intangible assets that comprise of knowledge, experience, customer rapport and infrastructure that may accelerate the organisational performance owing to its ability to create competitive advantage and value creation.

Congeneric to the definition of intellectual capital, there are no universal classification on the composition of IC. The classification varies in accordance of understanding on IC by academic scholars. In parallel with the past studies, this study follows the majority views which clarify that IC comprises of human capital, structural capital and relational capital. There are numbers of measurement methods have been employed by researchers as a way to measure the efficacy of intellectual capital in particular organisation. The most applicable method in calculating IC efficiency is value-added intellectual coefficient (VAIC) by Pulic [19] as have been applied by many past studies [5],[20],[21] including banking studies [2],[22],[23].[24].

2.3 *Shariah* corporate governance and intellectual capital

The nexus between *Shariah* corporate governance and intellectual capital is still under-explored. As mentioned by Nawaz [25] because of Islamic banking is based on the *Shariah* law, the Islamic banks are restricted to certain rules like avoidance of usury and uncertainty elements, thus they are expected to be more innovative as a way to facilitate the customers to subscribe Islamic banking products in order to elevate the bank performance. For that reason, the Islamic banks exploit their intellectual capitals to endorse the rightful products [26]. Due to *Shariah* board members as one of key players in making decisions in Islamic banks, so they are expected to have significant roles in employment of intellectual capital. The *Shariah* governance measures that will be tested against IC efficiency as proposed in this study are as follows:

***Shariah* board size (SBSIZE):** *Shariah* board size refers to the number of *Shariah* board members serving on the board. Theoretically, the larger boards can increase the amount of expertise on the board which will directly elevate the information processing capabilities of the board members [27]. In a recent discourse on governance and intellectual capital which was tested within a different sector, it is indicated that board size asserts a positive impact intellectual capital efficiency.

***Shariah* board expertise (SBEXP):** This variable refers to the formal educational backgrounds of the *Shariah* board members in financing or accounting field of studies. As pinpointed by Saeed, Rasid, and Basiruddin [28], the skills, knowledge and expertise of the directors individually will lead to a better performance. More precisely, possessing degrees in financing area can benefit the financing management of the organisation [29].

***Shariah* female member (SBFEM):** This variable signifies the representation of females in the *Shariah* board. According to Bao, Fainshmidt, Nair, and Vracheva [30], some instances of women characteristics in top management are they are more socially oriented as compared to the men, they are more attentive to

stakeholders and they are more likely to focus on non-financing aspect like customer satisfaction. Simply put, these qualities can bring positive impacts to IC efficiency.

***Shariah* nationality diversity (SBNAT):** This variable refers to the foreigner representation on a board by setting aside the specific nationality of the members. As pinpointed by Al-Musalli and Ismail [22], a demographic diversity equips the board members with an extended range of viewpoints and solutions that directly embellish the efficiency and effectiveness of the decision making of the board which will assist in building up the quality of actions taken by the firm. To add up, based on the combination of human and social capital theory and resource dependence theory, the boards' social and human capital will increase by practicing the diversity in terms of nationality of the members [31].

***Shariah* board meeting (SBMEET):** This variable refers to the number of meetings held by Shariah board in a year. In a general sense, the number of meetings held in a year by the bank can signify the activeness of the board. Eluyela et al. [32] stressed on the importance of board meeting to be conducted regularly as it can serve as an important medium for effective harmonisation of the board members' opinions in attaining organisational objectives. Besides, Ying-fen, Yaying Mary Chou, and Feng-ming [33] suggested that the absenteeism practice by the board members may be a hindrance for them to exercise their roles and responsibilities effectively in which directly creates the agency problem.

Primarily, the study seeks to examine the impact of corporate governance measures on VAIC and their components namely HCE, SCE, CEE and REE. Correspondingly, in order to fulfill the objective of this study, the following hypotheses as shown in Table 1 are being tested.

Table 1. Summary of hypotheses

***Shariah* Corporate Governance Measures and VAIC**	
H1:	There is a significant positive relationship between *Shariah* board size (SBSIZE) and value added intellectual capital coefficient (VAIC) of Islamic banks.
H2:	There is a significant positive relationship between *Shariah* board expertise (SBEXP) and value added intellectual capital coefficient (VAIC) of Islamic banks.
H3:	There is a significant positive relationship between *Shariah* board female member (SBFEM) and value added intellectual capital coefficient (VAIC) of Islamic banks.
H4:	There is a significant positive relationship between *Shariah* board meeting (SBMEET) and value added intellectual capital coefficient (VAIC) of Islamic banks.
H5:	There is a significant positive relationship between *Shariah* board nationality (SBNAT) and value added intellectual capital coefficient (VAIC) of Islamic banks.
***Shariah* Corporate Governance Measures and HCE**	
H6:	There is a significant positive relationship between *Shariah* board size (SBSIZE) and human capital efficiency (HCE) of Islamic banks.
H7:	There is a significant positive relationship between *Shariah* board expertise (SBEXP) and human capital efficiency (HCE) of Islamic banks.
H8:	There is a significant positive relationship between *Shariah* board female member (SBFEM) and human capital efficiency (HCE) of Islamic banks.
H9:	There is a significant positive relationship between *Shariah* board meeting (SBMEET) and human capital efficiency (HCE) of Islamic banks.
H10:	There is a significant positive relationship between *Shariah* board nationality (SBNAT) and

	human capital efficiency (HCE) of Islamic banks.
***Shariah* Corporate Governance Measures and SCE**	
H11:	There is a significant positive relationship between *Shariah* board size (SBSIZE) and structural capital efficiency (SCE) of Islamic banks.
H12:	There is a significant positive relationship between *Shariah* board expertise (SBEXP) and structural capital efficiency (SCE) of Islamic banks.
H13:	There is a significant positive relationship between *Shariah* board female member (SBFEM) and structural capital efficiency (SCE) of Islamic banks.
H14:	There is a significant positive relationship between *Shariah* board meeting (SBMEET) and structural capital efficiency (SCE) of Islamic banks.
H15:	There is a significant positive relationship between *Shariah* board nationality (SBNAT) and structural capital efficiency (SCE) of Islamic banks.
***Shariah* Corporate Governance Measures and CEE**	
H16:	There is a significant positive relationship between *Shariah* board size (SBSIZE) and capital employed efficiency (CEE) of Islamic banks.
H17:	There is a significant positive relationship between *Shariah* board expertise (SBEXP) and capital employed efficiency (CEE) of Islamic banks.
H18:	There is a significant positive relationship between *Shariah* board female member (SBFEM) and capital employed efficiency (CEE) of Islamic banks.
H19:	There is a significant positive relationship between *Shariah* board meeting (SBMEET) and capital employed efficiency (CEE) of Islamic banks.
H20:	There is a significant positive relationship between *Shariah* board nationality (SBNAT) and capital employed efficiency (CEE) of Islamic banks.

3. Data and methodology

3.1 Sample selection

This current study is focusing on Islamic banks worldwide. Initially, the data are extracted from the Bankscope database. In the first stage of sample selection, there are 163 Islamic banks across 34 countries. Nonetheless, because of the data availability, the final sample comrpises of a panel of 59 Islamic banks across 19 countries, over the twelve-year period of 2006 to 2017. The governance variables which have been disclosed in the banks' annual reports are downloaded from banks' websites respectively. The country-wise sample distribution for this study is as presented in Table 2 where United Arab Emirates represents 13.56% of the overall samples, which is the highest, whilst Brunei, Thailand, Palestine, Lebanon, Tunisia and South Africa notably represent only 1.69% of the total samples each.

Table 2. Distribution of Sample Banks

Country	Total	Percentage (%)	Observation	Percentage (%)
Bahrain	5	8.48	55	9.8
Bangladesh	5	8.48	45	8.1
Brunei	1	1.69	6	1.1
Egypt	2	3.39	17	3.0
Indonesia	4	6.78	34	6.1
Jordan	2	3.39	19	3.4
Kuwait	4	6.78	48	8.6
Lebanon	1	1.69	5	0.9
Malaysia	7	11.86	73	13.1
Pakistan	5	8.48	48	8.6
Palestine	1	1.69	12	2.1
Qatar	4	6.78	39	7.0

Saudi Arabia	3	5.09	25	4.5
South Africa	1	1.69	9	1.6
Thailand	1	1.69	12	2.1
Tunisia	1	1.69	8	1.4
Turkey	2	3.39	16	2.9
UAE	8	13.56	73	13.1
United Kingdom	2	3.39	15	2.7
Total	**59**	**100**	**559**	**100.0**

3.2 Dependent variables

The dependent variable of this study is intellectual capital efficiency. IC efficiency is computed by employing VAIC as it has numbers of perks such as the data is easy to obtain from the banks' annual reports [34] as well as it provides straightforward and uncomplicated procedure to measure the value creation [35]. Hypothetically, the higher the VAIC value, the higher the utilisation of intellectual capital of the bank. This method composes of three sub-variants namely Human Capital Efficiency (HCE), Structural Capital Efficiency (SCE) and Capital Employed Efficiency (CEE) whilst VAIC is the sum of HCE, SCE and CEE. The formula as follows:

$$VAICi = HCEi + SCEi + CCEi \quad (1)$$

Where VA can be measured by summing profit before tax and payroll expenses as computed by Tran and Vo (2018). HC refers to payroll expenses, while in attaining the value of SC, HC value is deducted from the value of VA. CE is measured by subtracting total assets from intangible assets.

3.3 Independent variables

The independent variables of this study are represented by *Shariah* corporate governance measures. As for this study, there are five governance measures will be tested against intellectual capital efficiency namely *Shariah* board size which measured by total number of *Shariah* board members, *Shariah* board expertise is measured by the proportion of *Shariah* board members with accounting or financing qualification to *Shariah* board size while female *Shariah* board members is measured by the proportion of female *Shariah* board members to total number of *Shariah* board members, *Shariah* board meeting is measured by the numbers of meetings held in a year and *Shariah* board nationality is taken into account by a dummy variable with the value of 1 is there is nationality diversity among the *Shariah* board members and value of 0 otherwise.

3.4 Control variables

The control variables are the bank-specific variables namely bank size which measures by natural logarithm of total bank's assets and bank's age proxies by number of years since banks' incorporation. As for macroeconomic variable, GDP per capita which proxies by natural logarithm of GDP per capita is being included in regression model. The summary of all variables used in this study is presented in Table 3.

Table 3. Summary of Variables

Type of Variable	Variable	Abbreviation of variable	Measurement
Dependent	Value added intellectual coefficient	VAIC	VAIC = HCE+SCE+CEE
	Human capital efficiency	HCE	HCE = VA/HC
	Structural capital efficiency	SCE	SCE = SC/VA
	Capital employed efficiency	CEE	CEE = VA/CE
Independent	Shariah board size	SBSIZE	Total number of Shariah board members assigned
	Shariah board expertise	SBEXP	Number of Shariah board members with accounting experience or financial qualification divided by total number of Shariah board members
	Shariah board female members	SBFEM	Number of female Shariah board members divided by total number of Shariah board members
	Shariah board meeting	SBMEET	Total number of Shariah board meetings held in a year
	Shariah board nationality	SBNAT	Dummy variable with the value of 1 is there is nationality diversity among the Shariah board members and value of 0 otherwise
Control			
Bank-specific	Bank size	SIZE	Natural logarithm of total assets
	Bank age	AGE	Number of years since banks' incorporation
Macroeconomic	GDP per capita	GDPC	Natural logarithm of GDP per capita

Source: Author's calculation

3.5 Regression models

Four regression models are formed as viewable in Table 4 in order to examine the impact of *Shariah* corporate governance on intellectual capital efficiency. Model 1 indicated the linkages between VAIC and *Shariah* corporate governance measures while Model 2, 3, 4 decomposed the components of VAIC which are HCE, SCE and CEE in order to know the impact of *Shariah* corporate governance measures on individual components of VAIC. The regression models for this study as in Table 4:

Table 4. Regression Models

	Model	Functional Representations
Model 1	VAIC = f (SBSIZE, SBEXP, SBFEM, SBMEET, SBNAT SIZE, AGE, GDPC)	$VAIC=\beta_1+ \beta_2$ SBSIZE$+ \beta_3$ SBEXP$+\beta_4$ SBFEM$+\beta_5$ SBMEET$+\beta_6$ SBNAT$+ \beta_7$ SIZE$+ \beta_8$ AGE$+ \beta_9$ GDPC$+ \varepsilon$

Model 2	HCE = *f* (SBSIZE, SBEXP, SBFEM, SBMEET, SBNAT SIZE, AGE, GDPC)	HCE = β_1+ β_2 SBSIZE+ β_3 SBEXP+β_4 SBFEM+β_5 SBMEET+β_6 SBNAT+ β_7 SIZE+ β_8 AGE+ β_9 GDPC+ ε
Model 3	SCE = *f* (SBSIZE, SBEXP, SBFEM, SBMEET, SBNAT SIZE, AGE, GDPC)	SCE = β_1+ β_2 SBSIZE+ β_3 SBEXP+β_4 SBFEM+β_5 SBMEET+β_6 SBNAT+ β_7 SIZE+ β_8 AGE+ β_9 GDPC+ ε
Model 4	CEE = *f* (SBSIZE, SBEXP, SBFEM, SBMEET, SBNAT SIZE, AGE, GDPC)	CEE = β_1+ β_2 SBSIZE+ β_3 SBEXP+β_4 SBFEM+β_5 SBMEET+β_6 SBNAT+ β_7 SIZE+ β_8 AGE+ β_9 GDPC+ ε

Notes: VAIC, HCE, SCE, CEE are value-added intellectual coefficient, human capital efficiency, structural capital efficiency and capital employed efficiency. *Shariah* governance variables proxy by SBSIZE, SBEXP, SBFEM, SBMEET, SBNAT are total number of members assigned on the *Shariah* board of directors, the proportion of *Shariah* board members with accounting experience or financial qualification to *Shariah* board size, the proportion of female *Shariah* board members to *Shariah* board size, numbers of meetings held in a year and a dummy variable with the value of 1 is there is nationality diversity among the *Shariah* board members and value of 0 otherwise, respectively. SIZE, AGE, GDPC, are natural logarithm of total assets, number of years since banks' incorporation and natural logarithm of GDP per capita respectively.

4. Results and findings

4.1 Descriptive statistics

Table 5 presents the descriptive statistics of *Shariah* governance variables as independent variables along with VAIC and its three components as dependent variable accompanied with three control variables. The mean value of VAIC is 3.560. In contrast to other studies, the mean value of VAIC in this study is higher than the mean value of VAIC of the banks that are operating in banks in Tanzania (2.738) [36], and Thailand (0.683) [24] whilst it is slightly lower than the mean value of VAIC of the banks that are operating in Turkey (3.887) [23]. In the same manner when compared with the study conducted by Nawaz [25] on Islamic banks operating in 21 countries, the mean value of VAIC in this study also is slightly lower (3.93). The negative signs of the values of IC variables denote that the costs borne by the banks in investing IC are more than what IC can assist in improving the banks' performance [37]. Focusing on mean of VAIC which recorded 3.560 shows that, in average, the sampled Islamic banks are able to utilise intellectual capital resources efficiently with positive trend. It is noting that HCE is the component that contributes highest to the value of IC as compared to SCE and CEE with the average value of 2.756.

Table 5. Descriptive Statistics of Variables

Variable	Minimum	Maximum	Mean	Standard deviation
VAIC	-2.660	10.563	3.560	2.018
HCE	-4.060	9.660	2.756	1.812

SCE	-2.839	9.167	0.561	0.616
CEE	-0.010	6.229	0.244	0.716
SBSIZE	1	12	4.167	1.818
SBEXP	0	1	0.506	0.246
SBFEM	0	0.5	0.029	0.092
SBMEET	0	39	6.482	3.818
SIZE	9.540	18.332	14.906	1.563
AGE	0	60	18.470	13.372

Source: Author's calculation

4.2. Diagnostic checks

In order to determine the multicollinearity issue in regression models, Pearson correlation analysis has been conducted. As clearly deciphers in Table 6, there is no strong correlation between the exogenous variables.

Table 6. Correlation Matrix

Variable	SBSIZE	SBEXP	SBFEM	SBMEET	SBNAT	LNASSET	AGE	GDPC
SBSIZE	1.000							
SBEXP	-0.297	1.000						
SBFEM	0.205	0.093	1.000					
SBMEET	-0.024	-0.082	0.140	1.000				
SBNAT	0.047	-0.095	-0.049	-0.186	1.000			
LNASSET	0.209	0.034	0.140	0.080	-0.017	1.000		
AGE	-0.030	-0.053	-0.195	-0.049	0.092	0.314	1.000	
GDPC	-0.269	0.019	-0.024	-0.104	0.061	0.504	0.119	1.000

Source: Author's calculation

Breusch and Pagan Langrangian Multiplier test [38] is conducted in order to test whether pooled OLS is appropriate as compared to random effect estimation. Pooled OLS estimation is rejected since the test result shows that the variance of the individual-specific effects is not equal to zero. Therefore, it is not advisable to use pooled OLS estimation since it will provide less valid inference. Hausman tests [39] are applied in every regression models afterwards to determine whether random effects or fixed effects estimator is the best estimator to provide more robust results. Meanwhile, the robust heteroskedasticity-consistent standard errors are produced [37] in order to handle heteroskedasticity and autocorrelation issues.

4.3 Regression results

The regression results concerning of Model 1, 2, 3 and 4 that examining the relationship between *Shariah* corporate governance variables and IC efficiency of Islamic banks within the range of period of 2006 until 2017 are presented in Table 7. Based on the regression results in Table 7, the findings in Model 1 shows that

there is a significant relationship between SBSIZE and VAIC as the proxy of IC efficiency. Turning to the regression results in Model 2 when VAIC is decomposed into its three components, it is worth noting that *Shariah* board expertise in financing or accounting has significant positive relationship with IC efficiency. This result is directly implies that the financing or accounting knowledge that possessing by the *Shariah* board of directors has affect positively the employment of human capital. Besides, the age of the bank, has statistically significant negative relationship with HCE which indicates the longer the age of the bank, the lower the HCE.

Table 7. Regression Results

VARIABLES	Model 1 DV = VAIC	Model 2 DV = HCE	Model 3 DV = SCE	Model 4 DV = CEE
SBSIZE	0.324**	0.273	0.006	0.044
	(0.127)	(0.242)	(0.033)	(0.027)
SBEXP	0.870	1.801*	0.473*	-0.919
	(0.818)	(1.009)	(0.264)	(0.639)
SBFEM	0.284	0.016	-0.137	0.223
	(2.011)	(1.147)	(0.323)	(0.655)
SBMEET	0.057	0.061	0.001	0.005
	(0.055)	(0.038)	(0.011)	(0.007)
SBNAT	0.442	0.450	0.080*	-0.062
	(0.574)	(0.345)	(0.041)	(0.059)
LNASSET	-0.126	0.232	-0.148	-0.207
	(0.285)	(0.410)	(0.249)	(0.110)
AGE	-0.070	-0.112*	0.015	0.023
	(0.043)	(0.060)	(0.026)	(0.014)
GDPC	-0.534	-0.729	0.201	0.002
	(0.464)	(0.542)	(0.181)	(0.098)
Constant	9.448**	5.641	0.300	3.144
	(4.621)	(5.156)	(2.369)	(2.032)
Observations	404	404	404	404
R-squared	0.069	0.095	0.008	0.107

Notes: The numbers in the parentheses are the robust standard errors because the models suffer heteroskedasticity and autocorrelation. Hausman tests are being applied in determining the best estimator for regression models. All models using one way individual-specific fixed-effect. ***, **, * represent statistical significance at 1%, 5%, 10% respectively.

Consonant to the findings demonstrated in Model 2, SBEXP also affects positively SCE. It seems to imply that the qualification of *Shariah* board members in financing or accounting field is crucial since it can assist in accelerating the employment of structural capital of Islamic banks. It is also notably found that SBNAT brings significant positive impact on SCE. Simply put, when the *Shariah* board has the dissimilarity in terms of nationality, it brings positive effects on team performance when it comes to elevate the structural capital efficiency. Meanwhile in respect of the regression model where CEE as the independent variable, all the *Shariah* corporate governance variables is not found to influence CEE in Islamic banks.

5. Conclusion

The study offers the lucid insights on SCG and IC efficiency which directly enrich literature pertinent to these notions. Up until now, there are very little discussions in quantifying the impact of *Shariah* corporate governance on

intellectual capital efficiency for Islamic banks. Based on the findings, it is worth to mention that *Shariah* board size has significant positive relationship with IC efficiency. Additionally, paying attention on the components of IC, *Shariah* board expertise in financing or accounting is seen to be the most important SCG characteristics in elevating IC efficiency whereby they are able to make relevant strategies and decisions in utilising their human and structural capital resources vigorously. One of the implications stemming from this study is the practitioners are able to identify what are the characteristics of *Shariah* board members that can give positive impacts to IC efficiency. Whilst providing novel contribution on the relationships between SCG and IC, this present study is not without its limitations and a number of caveats need to be noted as cautionary remarks. The data availability makes this study consists of small sample size. The limitation of this study also in regard of the criticisms argued by other studies towards VAIC methodology. Thus, the future studies can adopt alternative measures that can measure IC more precisely for instance acquire the data by conducting questionnaire on employees and managers.

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