Corporate Governance, Risk-taking and Efficiency of Islamic Banks: Comparative Study Between Pakistan and Malaysia

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ABSTRACT

Purpose: This study aims to compare the governance, risk-taking, and efficiency of pure Islamic Banks between Pakistan and Malaysia.

Design: Total 9 years of data from 2009 to 2017 used for analysis. Data Envelopment Analysis (DEA) has been used for the measurement of Islamic bank's efficiency. Efficiency has been measured by (Technical Efficiency, Pure Technical Efficiency, and Scale Efficiency). Z-score has been used to measure risk-taking.

Results: This comparative study shows that Shariah Supervisory Board has a significant impact only on Malaysian Islamic Banks with technical, pure technical, and scale efficiency. At the same time, board independence has a meaningful relationship with the efficiency of IBs of both countries. Board meetings significantly impact Pakistani Banks' pure technical efficiency while it substantially affects Malaysian banks' technical efficiency. Results also show that risk-taking has a significant negative impact on the efficiency of both countries.

Implications: Pakistani Islamic banks should focus more on Shariah Supervisory Boards to develop the Islamic Banking system in Pakistan because it significantly impacts the Efficiency of Malaysian IBs.

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Introduction

Banking efficiency is the combination of all these strategies. Banks are aware of their all resources and select such a variety that offers maximum output with minimum input. Banks that adopt such type of combination for their resources become more efficient than others. It helps to become more efficient for all kinds of competition in the advanced technological era. The measurement of banks' efficiency includes calculating their efficiency scores under efficiency limit through non-parametric or parametric tactics. Data Envelopment Analysis (DEA) is the most common method which is used to measure banking efficiency. DEA is based on two basic models. The first one is the CCR model, which has been established by (Chames, Cooper,

& Rhodes, 1978). CCR model is based on the assumption of CRS consistency (constant return to Scale) for apiece decision-making unit. The second model is BCC, established by (Banker, Charnes, & Cooper, 1984).

BCC model is based on the assumption of the inconsistency of return to Scale called variance return to scale (VRS) for each decision-making unit. Efficiency is measure through the difference between the situation of the company and the efficiency limit. The difference is expressed through scores of efficiencies, which lies among 0 and 1. If this spread is equal to unity, there is total efficiency of a given unit. Thus, as these scores are away from 1, it leads to a superficial efficiency level. When this condition occurs, then it is compulsory to seek and explain this case of inefficiency. A good corporate governance structure helps to minimize corporate risk, enhances the corporate value, and leads towards the fairness of accounts, hence operational efficiency and bank productivity increase (Fu, Lin, & Molyneux, 2014).

In literature, many studies indicate that a good corporate governance structure enhances efficiency in banks' case (Adams & Mehran, 2012; De Andres & Vallelado, 2008; Musa, 2020). All these studies indicate a positive relationship between governance and bank efficiency by supporting an argument that through good governance structure, banks become able to reduce the cost of their capital and better utilize their resources, which ultimately enhance efficiency. Agency theory supports this argument in which managers work for the shareholder's best interests (Jensen & Meckling, 1976). The governance structure enforces its managers to decrease asymmetry into the information, which leads to the agency problem. Hence it makes firms to be more productive and efficient.

Corporate governance has significantly enhanced the efficiency of Islamic banks. It has become stronger by developing Islamic Financial Institutions (IFIs) (Saeed & Saeed, 2018). Now a day, Malaysia is playing a crucial role in the development of Islamic Financial Institutions. The current Govt. of Pakistan is also leading Pakistan towards a model of Riyasat-E-Madina, which will be based on Shariah Principles. In this case, Pakistani society will move towards Islamic Financial System. As Malaysia has an excellent Islamic Banking System, so in this study, we will compare the governance, risk-taking, and efficiency of Islamic Banks of Pakistan and Malaysia. This comparison will provide new insight to Pakistani Islamic banks' policymakers that how can IBs become more developed in Pakistan like Malaysia. We will highlight those elements that help the Islamic banking sector become more efficient in Pakistan like Malaysia.

Literature Review

Many studies have been conducted to explore banking efficiency determinants (Aly, Grabowski, Pasurka, & Rangan, 1990; Pasiouras, 2008; Spong, Sullivan, & DeYoung, 1995). Hassan and Hussein (2003) studied Islamic banking efficiency in Sudan through the "Data Envelopment Analysis" (DEA) technique. According to Yudistira (2004), Islamic banks can quickly achieve perfect efficiency scores. This study also explored that during the Asian crisis of 1999s, IBs efficiency declined. This study also addressed that the decline in efficiency scores was basically due to pure technical inefficiency (PTE) than the efficiency scale.

Middle Eastern Islamic banks were found to be more efficient than others. While on the other hand, Sufian and Noor (2009) indicate that Islamic banks of the MENA region have high technical efficiencies compared to other Islamic banks of Asia. Islamic banks put a higher score on technical efficiency (Abdul Rahman & Rosman, 2013). The study results also reveal that Islamic banks that are operational in the Southeast Asia region have a high-efficiency level compared to those Islamic banks that operate in the MENA region. In this study, they have also compared MENA region IBs with Gulf countries. From this perspective, results reveal that IBs which operate in Gulf countries are also more efficient than the MENA region. Authors conclude that the country's economic conditions are considered a key determinant of Islamic bank's efficiency.

Hassine and Limani (2014) studied Islamic banks' efficiency in the MENA region by using five years of data from 2005 to 2009. They used the DEA method for the measurement of efficiency. Authors found that technical efficiency was the critical determinant of Islamic banks' inefficiency compared to scale efficiency. Scale

efficiency had high scores as compared to technical efficiency. This study also compared Islamic banks' size and found that Islamic banks with small size had more efficiency than large-sized banks. (Kamarudin, Sufian, Loong, & Anwar, 2017) studied a comparative study between foreign and domestic Islamic banks in Brunei, Malaysia, and Indonesia using nine years of data from 2006 to 2014. The study results reveal that domestic banks have a higher level of technical, pure technical, and scale efficiencies in targeted countries of the study. Results also indicate that Islamic banks are inefficient in controlling costs.

Srairi, Kouki, and Harrathi (2012) studied a sample of 25 pure Islamic banks of Gulf countries by using seven years of data from 2003 to 2009. In this study, they examined the association between the efficiency of Islamic banks and their share performance. The study results revealed that a change in pure technical efficiency and technical efficiency has a positive relationship with equity return. Results also show that scale efficiency does not influence return on equity. Simultaneously, the technical efficiency of Islamic banks is mainly based on the wrong Scale of their operations. Bahrini (2017) studied the determinants of Islamic banks' efficiency of MENA region Islamic banks using six years of data from 2007 to 2012. The study results show that pure technical inefficiency was a key determinant of technical inefficiency compared to scale inefficiency of all Islamic banks of the MENA region. After the study's findings, the author recommends that managers focus more on their management practices and not increase board size.

Bader, Mohamad, Ariff, and Shah (2008) found no difference in the performance of Islamic vs. conventional banks. Both types of banks are highly efficient in terms of resource utilization and generate efficient revenues. While Johnes, Izzeldin, and Pappas (2009) studied a comparative analysis of Conventional and Islamic banks' efficiency of the GCC region by using six years of data from 2004 to 2007. Results of the study revealed that conventional banks were more efficient than Islamic banks of the GCC region.

According to Ahmad, Noor, and Sufian (2010), Islamic banks were found more efficient than conventional banks in their management planning. This study also indicates that banks perform well, which operate in countries with a high-income level compared to low-income countries. Haron, Abu Bakar, and Tahir (2011) found out that Islamic banks' size was considered a key determinant of efficiency. The larger banks were found to be more efficient. Olson and Zoubi (2011) conducted a comparative study about banks' efficiency in the MENA region and European region. They found out that banks of the MENA region were less efficient than banks of the European region. The author also concluded that banks had the same efficiency level in developing and developed countries. Finding also indicated that all banks of the MENA region were below the optimal size.

Gishkori and Ullah (2013) conducted a comparative study between conventional and Islamic banks' efficiency in Pakistan by using the CRS model. Results of the study indicated that Islamic banks were less efficient than traditional banks of Pakistan. Results also showed that the scale efficiency of both Islamic and Conventional banks was the same. They also studied the determinants of technical efficiency and found that ownership, size of the bank, and profitability were the determinants of efficiency. (Said, 2012) learned the efficiency of Islamic banks during the 2008 crisis. The study results indicated that from 2006 to 2008, Islamic banks' efficiency increased, but it declined during 2009. During the 2008 crisis, Islamic banks of the Middle East had a higher level of efficiency.

Said (2013) conducted a study to measure the technical efficiency of Islamic banks of the MENA region and some other Islamic banks during the economic crisis of 2008. Results of the study revealed that Islamic banks other than the MENA region were found as technically inefficient. Furthermore, results also showed that putrefaction of "Technical efficiency" into both pure technical and scale efficiency indicated that Islamic banks other than the MENA region had their resource allocation problem. (Rosman, Abd Wahab, & Zainol, 2014) Studied efficiency of Islamic banks by using 79 Islamic banks of the Middle East and Asia by using four years of data from 2007-2010 to examine the economic crisis of 2008. The study results revealed that during the economic crisis of 2008, Islamic banks were found to be managed well in all activities and operations. While

due to the economic crisis, most Islamic banks had an inefficient Scale due to declines in returns. Results also revealed that capitalization and profitability were critical determinants of the Islamic bank's efficiency during the economic crisis. According to Johnes, Izzeldin, and Pappas (2014), Islamic banks and conventional banks had no difference in efficiency immediately after the economic crisis. But, by performing a "met-frontier analysis," they found that traditional banks had more efficiency than Islamic banks.

Our study will examine the efficiency of Islamic banks by comparing Pakistan and Malaysian Islamic banks through determinants of governance and risk-taking. Malaysia has many Islamic banks, and they have more proportion of the Islamic banking industry. So, we will make its governance, risk-taking, and efficiency comparison with Pakistani Islamic banks. Now a day, in Pakistan, Islamic banking is rapidly growing up. So, we will examine whether the management practices in the Islamic banks of Malaysia and Pakistan.

Many studies in the literature have explored the association between management and a firm's performance. There are mixed results of these studies. Some have a positive relationship, and some show a negative relation between governance and firm performance. Bhagat and Black (2001) studied corporate governance's significant connection with performance. Rashid, De Zoysa, Lodh, and Rudkin (2010) indicated that the director's independence has no impact on firm performance. Independent directorship can enhance transparency but does not affect the business firms' economic value. (Alabdullah, Yahya, & Ramayah, 2014; Brown & Caylor, 2006; Yusoff & Alhaji, 2012) all indicate that corporate governance has a constructive influence on firm performance.

Mitton (2002) asserts that small-level shareholders' rights and quality and transparency in financial reports are critical to corporate governance. They also indicate that good corporate governance can manage well during economic distress. (Klapper and Love (2004) found that good financial performance is positively correlated with good corporate governance. Bhagat and Bolton (2008) investigated that board extent and CEO duality of duties have an optimistic consequence on firm performance. A few studies like Drakos and Bekiris (2010) and Basyith (2016) found an adverse association between corporate governance and firm performance.

Mezzi (2018) studied the relationship between governance and efficiency of Islamic banks. Results showed that as governance size reduced, banks became more efficient. Mohd Abbas, Abdul Rahman, and Mahenthiran (2009) studied ownership structure and performance of Islamic Financial Institutions of Malaysia and found out that government, families, and institutional ownership had a significant impact on the performance of IFIs. As part of governance, ownership structure did not affect Islamic banks' performance (Zouari & Taktak, 2014). The Shariah supervisory board's size had a positive impact on Islamic banks' performance in their supervisory role (Mollah & Zaman, 2015). At the same time, CEO duality harms the implementation of Islamic banks. Khan and Shah (2015) conducted a comparative study between Islamic and conventional banks of Pakistan. Results showed that Islamic banks had better technical efficiency as compared to traditional banks. The pure technical efficiency of Islamic banks was also better than conventional banks of Pakistan. Abbas, Yussof, and Anjum (2020) found that the Shariah supervisory board (Shariah Board reputation, Expertise, Cross-membership, Change in composition, and Qualifications of Shariah Supervisory board) have a significant impact on the performance of Islamic banks. Sufian (2007) conducted a study to examine efficiency of Malaysian Islamic banks by using five years of data from 2001-2005. Results showed that scale inefficiency was stood over pure technical inefficiency. Results also showed that domestic Islamic banks were more efficient than foreign.

Methodology

Data Envelopment Analysis as Measure of Efficiency

Farrell developed DEA (Data Envelopment Analysis) method in 1957. Still, the DEA model was projected by Charl, which is known as CCR (Charnes, cooper, and Rhoades) model with CRS (constant return

to Scale). Afterward, Banker et al. (1984) extended it and allowed the Variables return scale (VRS). VRS is based on the assumption that technical efficiency is disintegrated into PTE (pure technical efficiency) used for management efficiency and into SE (scale efficiency), which is used as an optimal size indicator DEA method helps to identify all these sources of inefficiency, which are not shown in financial rations.

VRS explores all these sources, which leads toward inefficiency due to optimal size or management structure. VRS is widely used because it is better for assessment as banks operate in an imperfectly competitive environment. In this study, we will use both VRS and CRA assumptions in which under CRS assumption, it is assumed that banks are operated at optimal Scale. Under the VRS assumption, it is assumed that regulatory variations and technical progress are due to banks' different sizes. Technical efficiency indicates the ability of banks in which banks use minimum inputs and generate maximum output. While pure technical efficiency means banks' ability to minimize wastage of resources and scale efficiency increases as banks approach their optimal sizes.

Sample Size

This research study will compare governance, risk-taking, and efficiency among Islamic banks of Pakistan and Malaysia. We have used nine years of hand-collected data from the period of 2009 to 2017. We have selected a total of 8 pure Islamic banks. We have Selected 5 Islamic banks from Malaysia and 3 Islamic banks from Pakistan. In this study, to measuring efficiency of Islamic banks, we have used three inputs (deposit, operating fixed cost, and HR cost) and two outputs (investment and financing).

Research Design

The impact of governance and risk-taking on the efficiency of Islamic banks of Malaysia and Pakistan has been assessed using the following equation.

$$EFF_I = \beta_0 + \beta_1\,SSB\text{-}Size + \beta_2 BSIZE_I + \beta_3\,B\text{-}IND_I + \beta_4\,B\text{-}MET_I + \beta_5 CEOD_I + \beta_6 CG\text{-}FM_I + \beta_7\,F\text{-}SIZE_I + \beta_8 PRFT_I + \beta_9 RISK\text{-}T_I + \mu_t$$

Measurement of Variables

Measurement of the above-discussed variables has been given below:

Variable	Measurement of Variables
SSB-SIZE	Total number of Shariah supervisory board
BSIZE	Total number of Board of Directors
B-IND	% of Independent directors inboard
B-MET	Number of total annual meetings of the board
CEOD	Dummy 1 if there is CEO duality; otherwise 0.
CG-FM	% of Females on board
F-SIZE	Log of total assets
PRFT	Return on Assets
RISK-T	Z-Score
Efficiency	Inputs = Deposits + Operating Fixed Cost + HR cost
Out puts = Investments + Financing	

Results and Discussion

Table 1 - Descriptive Statistics of Pakistani IBs

Variable	TE	PTE	SE	SSB-SIZE	BSIZE	B-IND	B-MET	CEOD	CG-FM	F-SIZE	PRFT	RISK_T
Mean	0.282	0.604	0.527	0.618	0.918	0.347	0.538	0.667	0.292	7.927	0.008	0.931
Median	0.369	0.483	0.556	0.602	0.903	0.286	0.699	1.000	0.000	7.906	0.010	1.025
Maximum	0.583	0.914	0.914	0.778	1.114	0.857	0.903	1.000	1.200	8.972	0.017	1.580
Minimum	0.012	0.413	0.015	0.477	0.699	0.000	0.000	0.000	0.000	7.119	-0.014	0.276
Std. Dev.	0.164	0.195	0.319	0.130	0.121	0.279	0.338	0.480	0.507	0.565	0.006	0.432
Skewness	0.131	0.647	-0.047	0.169	0.031	0.331	-0.833	0.707	1.137	0.218	-1.613	-0.026
Kurtosis	2.180	1.737	1.454	1.396	1.631	2.116	2.058	1.500	2.333	1.816	6.194	1.672

Above table 2 below shows the descriptive statistics of the Islamic banks of Pakistan. Descriptive Statistics of the study shows that the Islamic banks of Pakistan have 28% technical efficiency. Simultaneously, Pakistan's Islamic banks have a higher level of pure technical efficiency, which is about 60.4%. The mean value of scale efficiency is 52.7%, which means banks have 52.7% scale efficiency.

Table 2 - Correlation Analysis of Pakistani IBs

Probability	SSB-SIZE	BSIZE	B-IND	B-MET	CEOD	CG-FM	F-SIZE	PRFT	RISK_T
SSB_SIZE	1.00								
BSIZE	-0.05	1.00							
B-IND	-0.08**	0.01**	1.00						
B-MET	-0.03**	0.02**	0.06**	1.00					
CEOD	0.03**	0.01	-0.03	-0.08**	1.00				
CG-FM	0.04**	-0.04*	-0.10*	-0.15**	0.09*	1.00			
F-SIZE	-0.05**	0.03**	0.04	0.09**	-0.08	-0.17**	1.00		
PRFT	0.05*	0.00	0.04	-0.09*	0.02**	0.01*	-0.01	1.00	
RISK_T	0.01	0.01	-0.02	-0.07**	0.11**	0.08*	-0.02	0.03*	1.00

Table 2 shows the correlation matrices of all independent variables. SSB size has a significant negative relationship with board size, board independence, board meetings, CEO duality of duties, females inboard, and firm size. At the same time, SSB size has a positive correlation only with profitability. Board size has a significant positive correlation with board independence, board meetings, and its size. At the same time, board size has a significant negative correlation with females on the corporate board. Board independence has a significant negative correlation with only females on board.

At the same time, board independence has a significant positive association with only board meetings. Board meetings have a significant negative correlation with CEO duality, females on board, profitability, and risk-taking. Board meetings have only a positive significant correlation with firm size. COE duality has a significant positive correlation with females in the board, profitability, and risk-taking while negatively correlated with only fit size. Females onboard show a significant positive correlation with profitability and risk-taking. At the same time, it has a significant negative correlation with firm size. Profitably has a significant positive correlation with risk-taking.

Table 3 - Results of Pakistani IBs

	TE	PTE	SE
SSB-SIZE	-0.0763 (0.8592)	0.7701 (0.1188)	-1.2086***(0.0039)
BSIZE	-1.0926 (0.1178)	-0.2755 (0.7121)	-0.3787 (0.5129)
B-IND	0.3219*** (0.0017)	0.0348*** (0.03)	0.2381** (0.0565)
B-MET	-0.4579 (0.1289)	0.8852*** (0.0126)	-0.5828*** (0.0294)
CEOD	0.2024 (0.2728)	-0.2686 (0.1919)	0.1764 (0.2641)
CG-FM	0.6995*** (0.0142)	0.5395** (0.0739)	0.4696** (0.0466)
F-SIZE	0.1558 (0.1056)	0.0333 (0.7451)	0.2213*** (0.0113)
PRFT	15.267*** (0.0259)	4.1213 (0.5559)	19.616*** (0.0019)
RISK_T	-0.2173*** (0.0047)	0.1824*** (0.0247)	-0.1642*** (0.0106)
C	0.8786	-0.8740	0.1183

R-squared	0.8304	0.7050	0.9537
Adjusted R-squared	0.7406	0.5488	0.9291
F-statistic	9.2473	4.5133	38.8828
Prob(F-statistic)	0.0000	0.0037	0.0000

SSBSIZE, total members of Shariah supervisory board. BSIZE, number of Board of directors. B-IND, percentage of independent board members. B-MET, number of real annual meetings of the board. CEOD is used for the duality of CEO duty at a time. CG-FM, total percentage of females as the board of directors. F-SIZE is used for the size of the firm. PRFT is used for profitability. RISK_T is used for risk-taking.

The impact of governance and risk-taking has been examined through Technical efficiency, pure technical efficiency, and scale efficiency. Results of Islamic banks of Pakistan indicate that in the case of Technical efficiency, board independence has a positive and significant impact on its efficiency. Females as part of the board also have a positive and meaningful relationship with technical efficiency. Profitability also has a positive and significant association with technical efficiency.

At the same time, risk-taking has a significant negative impact on technical efficiency. Secondly, in the case of pure technical efficiency, Board independence, board meetings, females as part of the board, and risk-taking have a positive and significant relationship with Pakistan's Islamic banks' pure technical efficiency. Thirdly, in the case of Scale efficiency, Shariah supervisory board, board meetings, and risk-taking have a negative but significant association with the efficiency of IBs of Pakistan. While, Board independence, females as part of the board, firm size, and profitability have a significant positive association with Pakistan's Islamic banks' scale efficiency.

Table 4 - Descriptive Statistics of Malaysian IBs

	TE	PTE	SE	SSB-SIZE	BSIZE	B-IND	B-MET	CEOD	CG-FM	F-SIZE	PRFT	RISK_T
Mean	0.692	0.776	0.705	0.771	0.919	0.531	0.942	0.733	0.128	7.468	0.007	0.817
Median	0.814	0.820	0.814	0.778	0.954	0.545	0.903	1.000	0.111	7.607	0.010	0.576
Maximum	0.910	0.914	0.910	0.954	1.079	0.778	1.380	1.000	0.400	8.862	0.231	2.344
Minimum	0.008	0.427	0.008	0.477	0.602	0.250	0.477	0.000	0.000	5.617	-0.316	0.150
Std. Dev.	0.262	0.117	0.241	0.105	0.119	0.118	0.205	0.447	0.097	0.960	0.060	0.481
Skewness	-1.908	-0.808	-2.103	-0.655	-1.418	-0.262	0.351	-1.055	0.377	-0.759	-2.419	0.972
Kurtosis	5.491	2.953	6.645	3.807	4.482	2.671	2.630	2.114	2.871	2.679	24.201	3.442

Above table 4 contains descriptive statistics of Malaysian Islamic banks. Descriptive statistics indicate that Malaysian Islamic banks have about 69% technical efficiency. The mean value of pure technical efficiency is 77%, suggesting that Malaysian Islamic banks have 77% pure technical efficiency. The mean value of scale efficiency is 70%, which means Malaysian Islamic banks have about 70% scale efficiency levels.

Table 5 - Correlation Matrix of Malaysian IBs

Probability	SSB-SIZE	BSIZE	B-IND	B-MET	CEOD	CG-FM	F-SIZE	PRFT	RISK_T
SSB_SIZE	1.000								
CG_B_SIZE	0.002	1.000							
BORD_INDPND	0.005**	0.002	1.000						
B_MEETNG	0.012**	0.009**	0.006	1.000					
CEO_DAULITY	0.002	0.002	0.009	-0.002	0.196				
CG_FEMALE	0.005**	0.001	0.002	0.014**	-0.002	1.000			
FRIM_SIZE	0.014**	-0.031*	-0.005	0.048*	-0.049	0.043**	1.000		
PROFITABLITY	-0.001	0.000	0.000	0.001	-0.006	0.001	-0.005	1.000	
RISK_TAKING	-0.007	0.000	0.002	0.011	0.043	0.016**	0.104	0.006	1.000

Table 5 contains a correlation analysis of all independent variables in the case of Malaysian Islamic banks. SSB size has a positive and statistically significant correlation with board independence, board meetings, females as part of the board, and firm size. The Board of director's size has a positive and significant correlation with discussions of the board. At the same time, it has a negative but significant correlation with firm size. Board meetings positively and significantly correlate with females as part of the firm's board and size. Females

as part of the board have a positive and significant correlation with Malaysia's Islamic banks' firm size and risk-taking. The rest of the variables have no positive or negative correlation with other variables.

Table 6 - Results of Malaysian IBs

	TE	PTE	SE
SSB-SIZE	0.0834***(0.0086)	0.0814* (0.0708)	0.03785*** (0.0076)
BSIZE	0.1609 (0.1726)	0.5891 (0.1145)	0.5006 (0.1891)
B-IND	0.2186*** (0.0236)	0.2386*** (0.0569)	0.1955*** (0.0521)
B-MET	0.2937*** (0.0044)	-0.5900** (0.0601)	-0.3744 (0.2379)
CEOD	-0.0004 (0.9894)	0.1723*** (0.0588)	0.1546* (0.0967)
CG-FM	0.2978 (0.1913)	1.1712 (0.1051)	0.7897 (0.2822)
F-SIZE	0.0320** (0.0421)	0.0803 (0.1017)	0.0482 (0.3324)
PRFT	-0.0366 (0.8686	-0.2469 (0.7237)	-0.5204 (0.4693)
RISK_T	-0.0834*** (0.0067)	-0.2930*** (0.028)	-0.1674** (0.0823)
C	0.1919	-0.0969	0.2516
R-squared	0.6777	0.3627	0.2063
Adjusted R-squared	0.5949	0.1988	0.0022
F-statistic	8.1783	2.2130	1.0107
Prob(F-statistic)	0.0000	0.0450	0.4503

SSBSIZE, total members of Shariah supervisory board. BSIZE, number of Board of directors. B-IND, percentage of independent board members. B-MET, number of total annual meetings of the board. CEOD is used for the duality of CEO duty at a time. CG-FM, total percentage of females as the board of directors. F-SIZE is used for the size of the firm. PRFT is used for profitability. RISK_T is used for risk-taking.

Above table 6 contains the regression results of Malaysian Islamic banks. Results show that in the case of technical efficiency, the Size of the Shariah supervisory board, Board independence, Board meetings, and firm size have a positive and significant impact on Malaysian Islamic banks' technical efficiency. On the other hand, risk-taking has a significant negative relationship with technical efficiency. Secondly, in pure technical efficiency, Shariah supervisory board size, board independence, and CEO duality have a positive and significant association with pure technical efficiency. Moreover, board meetings and risk-taking have a negative but significant impact on pure technical efficiency. Thirdly, in scale efficiency, Shariah supervisory board size, board independence, and CEO duality have a positive and meaningful relationship. On the contrary, risk-taking has a negative but significant impact on Malaysia's Islamic banks' scale efficiency.

Conclusion and recommendations

This study's main aim was to compare governance, risk-taking, and efficiency of pure Islamic banks of Pakistan and Malaysia by using nine years of data from 2009 to 2017. We use three proxies of efficiency (Technical efficiency, Pure technical efficiency, and scale efficiency). This comparative study shows that Shariah supervisory board has a significant impact only on Malaysian Islamic banks with technical, pure specialized, and scale efficiency. At the same time, board independence has a positive and significant relationship with both countries' Islamic banks' efficiency. Board meetings have a significant positive impact on Pakistani banks' pure technical efficiency while it substantially affects Malaysian banks' technical efficiency.

CEO duality has a significant impact on the efficiency of only Malaysian banks. Females as part of the board have a substantial effect on the efficiency of Pakistani banks. Bank size has a significant impact on Pakistani banks' scale efficiency while it significantly impacts the technical efficiency of Malaysian banks. Results also show that risk-taking has a significant negative impact on the efficiency of both countries. Finally, based on the compression between Malaysian and Pakistani IBs, we conclude that Pakistani Islamic banks should focus more on Shariah supervisory boards for developing the Islamic banking system in Pakistan because the Shariah supervisory board has a significant impact on the Efficiency of Malaysian IBs. Based on our comparative results, we recommend that management of Pakistani Islamic Banks focus more on Shariah board and CEO duality so that Pakistani Islamic banks may become more efficient like Malaysian Banks.

Limitation and Future Direction

Firstly, this research study has limited data because we used just nine years of data from 2009 to 2017, so the data's future duration should be expanded. Secondly, we used limited shariah governance variables; in the future, other essential elements should be studied like Qualifications of Shariah board members, Shariah Board members' Experience, Shariah supervisory board meetings, etc. see more results.

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