IJEM
International Journal of Economics and Management
Journal homepage: http://www.ijem.upm.edu.my

Interplay of Institutional Quality, Efficiency, and Stability in The Islamic Banking Sector of Malaysia

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ABSTRACT

This study examines the interplay among institutional quality, efficiency, and financial stability in the Malaysian Islamic banking sector with a special emphasis on the interaction between efficiency and institutional quality. The sample comprises 16 Islamic banks from 2012 to 2020. The indicators for financial stability are Z-score based on return on assets (ZROA) and non-performing loans (NPLs). The system generalized method of moments (GMM) is employed to overcome the potential endogeneity issue in our regression. The findings show that institutional quality (i.e. government effectiveness, regulatory quality, and rule of law) influences Islamic banking performance. Based on the interaction model, government effectiveness and regulatory quality have a negative and statistically significant impact on ZROA. Conversely, government effectiveness and regulatory quality positively and statistically influence financial stability, as measured by NPLs. As for the rule of law, financial stability (i.e., ZROA) can be achieved in a strict environment when Islamic banks are inefficient.

JEL Classification: G21, D24
Keywords: Islamic banking; Institutional quality; Efficiency; Stability; Malaysia

Article history:
Received: 20 December 2023
Accepted: 2 April 2024

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DOI: http://doi.org/10.47836/ijeam.18.1.05

INTRODUCTION

The development of Islamic banking in Malaysia has positioned the country as one of the top countries in the global Islamic banking sector. For instance, Malaysia recorded a rapid compound annual growth rate (CAGR) for total assets along with Qatar, Indonesia, Saudi Arabia, United Arab Emirates (UAE), and Turkey (Ernst and Young, 2016). In the Southeast Asian region, Malaysia recorded the highest global Islamic banking share contribution based on total assets, and the country is regarded as a leader in Islamic finance in the region (Khan and Bashar, 2008). More specifically, the total asset of Islamic banking in Malaysia has increased from 10.8 to 11.1 percent in the third quarter of 2019 (Islamic Financial Services Board, 2020). The outstanding performance of Malaysian Islamic banking can be attributed to the implementation of sound institutions, regulations, and policies aimed at fostering the development of the Islamic banking sector (Khan and Bashar, 2008). At the moment, Malaysia's banking sector is viewed as the leading center for the Islamic finance industry (Lassoued, 2018).

Malaysia has a long history of Islamic finance, beginning in 1963 with the establishment of Lembaga Tabung Haji, which marked the onset of government support for Islamic finance. The official launch of the first Islamic bank in Malaysia, Bank Islam Malaysia Berhad (BIMB), followed in 1983. These milestones spurred the government to introduce various initiatives aimed at promoting Islamic finance such as the introduction of academic and research support, framework, legal rights, and Shariah advisory body to support the Islamic finance industry (Khan et al., 2021). Furthermore, the establishment of the Malaysia International Financial Centre (MIFC) aims to strengthen and internationalize the Islamic banking sector, positioning Malaysia as an international hub for Islamic finance. Furthermore, foreign banks operating in Malaysia are permitted to offer Islamic financial products to their customers. Currently, there are 17 Islamic banks operating in Malaysia.

Regulations governing Islamic banking in Malaysia are primarily overseen and enforced by Bank Negara Malaysia (BNM), Malaysia’s central bank. The regulatory framework for Islamic banking in Malaysia includes several key components. The Cash Control Act, introduced in 1953, is a piece of legislation that grants BNM the capacity to regulate and oversee the supply and circulation of money and credit in the country with the primary objective of managing monetary policy effectively and maintaining financial stability. The Takaful Act of 1984 governs the takaful (Islamic insurance) industry. This legislation regulates the establishment, operation, and supervision of takaful operators, ensuring compliance with Shariah principles. It outlines the requirements for takaful operators, including licensing, capital adequacy, investment guidelines, and disclosure obligations. The Payment Systems Act of 2003 regulates payment systems and provides a legal framework for the supervision and oversight of payment systems in Malaysia. This legislation aims to promote the efficiency, integrity, and stability of payment systems, while safeguarding the interests of users. The Islamic Financial Services Act of 2013 (IFSA) was introduced to provide a legal and regulatory framework for Islamic financial institutions in Malaysia, including Islamic banks. The IFSA sets out the licensing requirements, governance standards, Shariah compliance, risk management, and consumer protection measures for Islamic financial institutions. In addition, the Cash Control Act of 1953, Takaful Law, and Payment System Act of 2003 ensure that the activities of Islamic finance in Malaysia meet Shariah compliance (Husseini et al., 2019). The contribution of the Malaysian government to Islamic banking has made Malaysia one of the leading countries in Islamic finance (Thomson Reuters, 2018).

According to a report on the Islamic Finance Development Indicator (IFDI) (2022), Malaysia has been ranked in the top five countries in the developed Islamic finance category. Interestingly, Malaysia was ranked first in the IFDI (2022) with the highest score (113), followed by Saudi Arabia (74) and Indonesia (61). The advancement of Malaysia's Islamic banking sector, along with its significant contributions, serves as the driving force behind this study, highlighting the country's esteemed position in the global Islamic banking sector. Another reason to investigate Malaysian Islamic banking derives from the gap identified in earlier studies. Many prior research efforts have concentrated on aspects such as efficiency, profitability, and financial stability when comparing the conventional and Islamic banking sectors. Hence, this study incorporates institutional quality to explore its influence on the financial stability of the Malaysian Islamic banking sector. This inclusion is warranted because institutions, regulations, and policies likely play a role in the development of Malaysian Islamic banking.

The various initiatives and policies implemented to become an international Islamic finance hub affect the performance of Islamic banks in Malaysia in terms of efficiency, stability, and profitability. In other words, Malaysian institutions influence the performance of Islamic banks. According to Demirguc-Kunt et al. (2003), regulations affect the cost of financial intermediaries. A higher cost of financial intermediaries implies that the banks face inefficiency. Hasan et al. (2009) mention that institutions influence efficient production. In other words, institutions and efficiency play a significant role in bank performance. Furthermore, the stability of the banks may be affected by institutions and efficiency. Better institutional frameworks can foster lower information asymmetries that affect systemic risk-taking (Anginer et al., 2018). Meanwhile, efficiency also contributes to bank solvency; however, based on an empirical study by Roberodo (2004), solvency and efficiency may not be related. Blair and Heggestad (1978) find a possible trade-off between solvency and efficiency. The authors state that regulations related to the solvency requirement can improve efficiency in banking activities. In this sense, bank performance and financial stability can be affected by the efficiency of banks' rules and operations.

Since the COVID-19 pandemic in 2020, most countries have experienced a global impact, especially on their economic and financial sectors. Most countries have introduced various measures to support their current economic and financial institutions. In Malaysia, BNM has increased fiscal stimulus package for the affected sectors. In addition, BNM has lowered the overnight policy rate in March, May, and July of 2020 to overcome the market disruptions and volatility as a response to the weak global condition (International Monetary Fund, 2021). In March 2020, BNM will ease the temporary regulations and supervision for the banking sector to support the banks and the public. Notably, BNM announced that the banking sector in Malaysia would provide a moratorium to the public and flexibility of repayment that ended in September. Alternatively, those who lost their jobs and received salary deductions during the pandemic were entitled to a moratorium extension. In addition, the Shariah Advisory Council (SAC) of BNM announced the rulings during the pandemic, which is the principle of Ihsan (beneficence) (BNM, 2020). This will facilitate and guide Islamic banks in assisting customers.

According to Demirguc-Kunt et al. (2003), institutional influence is the cost of financial intermediaries, that is, efficiency. Then, the performance is affected by the efficiency. Based on these findings, this study examines the impact of institutions on stability in an efficient Islamic banking sector. Previous studies have focused on the effects of concentration, market structure, and competition on stability but not on the relationship between efficiency and stability. This study examines the role of institutions in determining financial stability in addition to efficiency. In other words, the interaction terms of institutional efficiency and their impacts on financial stability. Additionally, there is new evidence of institutional efficiency through interaction terms in Islamic banking in Malaysia. Another contribution of this study is that it provides further evidence, particularly regarding the institutional and Islamic banking sectors in Malaysia.

The remainder of this paper is organized as follows: Section 2 reviews the related literature. Section 3 describes the data and methodology used in this study. Section 4 presents and discusses the regression results, and Section 5 concludes the paper.

LITERATURE REVIEW

Determinants of Islamic Banks' Performance

Most studies compare the performance of Islamic banks with conventional banks. Performance observations are made in terms of profitability, risk, stability, and efficiency. For example, Smaoui et al. (2020) explore banks' funding liquidity risk and risk-taking from 2004 to 2016 in 18 countries. The sample included both conventional and Islamic banks. The findings show that Islamic banks that experience lower funding liquidity risk tend to be involved in lower risk activity. This indicates that Islamic banks are more stable as they tend to be involved in less risky portfolios. In addition, the authors find that bank size, liquidity risk, and inflation influence bank insolvency. Meanwhile, efficiency, output growth, market power, legal system, and concentration are insignificant for stability. In addition. Seho et al. (2021) examine whether the sectoral diversification of loans and financing affect banks' risk and returns. This study examines countries with dual banking systems - conventional and Islamic banking. The results show a reduction in banks' returns when the risk increases and

the diversification of loans and financing are involved.

Another study by Saeed et al. (2020) investigates the relationship between capital, efficiency, and risk in 14 countries from 2000 to 2012. The sample involved the conventional and Islamic banking sectors. The results differ depending on the type of banking system. The authors found that insolvency risks in Islamic banks increased due to the response to capitalization. Meanwhile, as for cost efficiency, conventional banks faced lower risk when their cost efficiency was higher. The authors also mention that Islamic banks abide by capital-related requirements. Consequently, an increase in capitalization had an impact on the insolvency risk. It shows that increases in the capital according to the requirement do not lower the risk for Islamic banks compared to conventional ones based on the evidence from this study. Other variables, such as size and inflation, recorded positive risk for conventional banks. Regarding Islamic banks, inflation recorded a negative relationship with insolvency risk; meanwhile, size is similar to the finding for conventional banks, which is a positive correlation. Other macroeconomic variables, such as the effect of real GDP growth on risk, produce different results: negative (positive) for conventional (Islamic) banks. This shows that the economic environment affects the conventional and Islamic banking sectors in different ways.

Incekara and Cetinkaya (2019) investigate the determinants of credit risk management in the context of Islamic banks in Turkey from 2014 to 2017. The dependent variable in this study was credit risk. The results indicate that net profit share, capital adequacy, and size record significant credit risk. Other bank-specific variables, such as loans to total assets and special provisions, have a negative impact on credit risk. Regarding macroeconomics, variables such as GDP were negative and significant, whereas inflation recorded an insignificant credit risk. Another study related to credit risk and stability in conventional and Islamic banks by Hassan et al. (2019) investigates the relationship between these variables in Organisation of Islamic Conference countries from 2007 to 2015. This study investigates the relationship between banks' credit and liquidity risks. This finding indicates that liquidity and credit risks have a negative relationship. In other words, it implies that higher credit risk increases liquidity risk. Next, the authors examine the stability and liquidity risk for both banks. This indicates that liquidity risk improves the stability for conventional banks and otherwise, in the context of Islamic banks. More specifically, to enhance the stability of Islamic banks, they need to hold higher liquidity.

In addition to credit risk, previous studies have examined the efficiency of Islamic banks. For instance, Saleh et al. (2020) analyze the productivity and efficiency of conventional and Islamic banks in the Gulf Cooperation Council (GCC) from 2005 to 2014. The authors find that securities are the main drivers of the inefficiency in the banking sector in the GCC. In addition, the results indicate that the highest contributor to Islamic banks' inefficiency is operating expenses. This implies that Islamic banks must manage their financial production costs. With regard to productivity, the findings indicate that fixed assets are the main contributors to total factor productivity growth. The results show that Islamic banks in the GCC are more dependent on fee-based income compared to conventional banks. This is because the operation of Islamic banks relies on an "interest-free" concept. In contrast, risk aversion and market power can enhance the profitability of Islamic banks. At the same time, non-interest income and managerial inefficiency lower the profitability of Islamic banks.

Moreover, Rehman et al. (2021) examine the impact of intellectual capital efficiency on bank performance, especially in Islamic banks in 29 countries from 2008 to 2017. In this study, the authors use ROA and ROE for bank performance and Tobin's q for market performance. As indicators for intellectual capital, the authors employed structural capital efficiency (SCE), human capital efficiency (HCE), and relational capital efficiency (RCE). The findings show that intellectual capital efficiency influences the performance of Islamic banks. In addition, the authors found that SCE and RCE were the most important factors in boosting Islamic banks' performance. In contrast, HCE recorded a negative and significant performance. Thus, a low HCE improves the performance of Islamic banks. The size of Islamic banks and foreign ownership also contribute to their performance.

In Malaysia, there are studies on the performance of Islamic and conventional banking sectors. Because Malaysia's banking sector is a dual banking sector, most authors tend to compare both performances and their dependency on certain factors. Saeed et al. (2021) examine the bank rates in Islamic and conventional banks. The results show that Islamic banks in Malaysia are affected by the rate policies of central and conventional banks. In other words, conventional bank rates positively influence Islamic bank rates. In addition, the authors

find that policy rates impact the banking system differently. The findings indicate that the policy rate influences deposit and financing rates in the long and short run. The authors conclude that the monetary policy introduced by BNM affects the performance of conventional and Islamic banks differently because of their business operations. Waemustafa and Sukri (2015) investigate the determinants of credit risk in the Malaysian banking sector. The results show that bank-specific variables indeed influence bank credit risk. The results indicate a significant relationship between Islamic contracts, regulatory capital, financing risky sectors, and credit risk. As for conventional banks, the variables that significantly impact credit risk are debt-to-total assets, loan loss provision (LLP), regulatory capital, size, liquidity, and earnings management. The macroeconomic factors that contribute to the credit risk of Islamic and conventional banks in Malaysia are inflation and M3.

Despite the credit risk, some authors have examined the profitability of conventional and Islamic banks in Malaysia. For instance, Ramlan and Adnan (2016) observe the profitability of Islamic and conventional banks from 2006 to 2011. Notably, with ROA and ROE as proxies for profitability, the findings show that capitalization significantly affects the profitability of Islamic banks. In addition, the total loans to total assets of Islamic banks are higher than those of conventional banks, indicating that Islamic banks in Malaysia are more profitable. A similar study by Abdulle and Kassim (2012) considers the profitability of Islamic and conventional banks in Malaysia following the global financial crisis. The sample covers from 2006 to 2010 and includes six Islamic and nine conventional banks. The indicators for profitability are similar to those of Ramlan and Adnan (2016), namely, ROA and ROE. The authors employed the liquidity and credit risk indicator to examine their impact on bank profitability. Islamic banks record higher liquidity than conventional banks, indicating that the former have less exposure to liquidity-related risks. This might be due to differences in bank operations. The authors also find no differences between Islamic and conventional banks vis-s-vis credit risk and profitability.

Another empirical study by Choong et al. (2012) also examines the performance of conventional and Islamic banks in Malaysia. The proxies for profitability are similar to those used in previous studies: ROA and ROE. The study sample consists of 11 Malaysian Islamic banks from 2000 to 2009. The finding indicates that liquidity is an insignificant factor in bank performance as proxied by ROA and ROE. Interestingly, credit risk is the most significant factor affecting Islamic banks' performance. Other variables, such as concentration and economic conditions, are insignificant for implementing Islamic banks. Market structure and economic conditions do not have a significant impact on banking sector performance.

Karim and Verhoeven (2005) investigate bank risks and Islamic financing in the Malaysian banking sector involving 23 commercial banks from 1988 to 1996. The authors observed the various risks, including credit, liquidity, and interest rates. The regression results indicate that banks involved in Islamic financing lower the credit and liquidity risks. The effect of bank size is vital for observing bank performance. This study implies that firm size has a significant impact on credit and interest-rate risks. Other variables, such as loan volatility, capital, securitization, and off-balance sheets, are found to be significant in liquidity risk. However, banks that offer Islamic financing significantly impact interest-rate risk compared to conventional banks. Regarding liquidity risk, the results show that derivative contracts, the issue of documentary credit, and mortgage loans to CAGAMAS lower the risk.

Meanwhile, the volatility of loans and capitalization increase liquidity risk. The study shows that banks respond differently to various types of risks. Nor (2015) investigates the determinants of impaired financing by Islamic banks in Malaysia from 2005 to 2013. The authors find that loan growth and LLP determine impaired financing. Furthermore, political stability and corruption index significantly affect impaired financing. The study observed the impact of staff efficiency, and the findings indicate a significant effect of funding impairment on capital ratio, loan growth, and profitability. Additionally, the results indicate that staff efficiency positively affects impaired financing. The higher the efficiency, the lower the impaired financing. This shows that bank risk can be reduced by efficient staff monitoring, assessment, and control of loan portfolios. Sapian et al. (2013) examine the impact of macroeconomic factors on Islamic banks in Malaysia from 2002 to 2012. The findings indicate that macroeconomic factors such as GDP and unemployment rates have insignificant effects on credit risk and non-performing financing. This implies that the economic conditions in Malaysia do not influence the performance of Islamic banks. Alternatively, the Islamic financing rate was the only variable found to be significant for performance.

Al-Mamun et al. (2014) also examined the financial performance of Malaysian conventional and Islamic banks from 2003 to 2010. The performance indicators used in this study are liquidity, credit risk, and

profitability. The results show that Islamic banks perform better in terms of credit risk and liquidity, while

conventional banks perform better in terms of profitability. The authors also examine the differences between Islamic and conventional banks. This shows that equity to net loans and ROA show no significant differences, while ROE and credit risk show significant differences between banks. A similar study by Abduh and Alias (2014) examines Islamic banking performance determinants in Malaysia from 2006 to 2010. The authors found that internal factors such as overhead cost to total assets and LLP to total assets were significant in the performance of Malaysian Islamic banks. The performance of Islamic banks is proxied by ROA and ROE. Regarding external factors, the results indicate that only inflation has a significant effect on bank performance. Extended studies related to Sulub and Salleh (2019), from 2012 to 2016, include four fully fledged Islamic banks and four conventional banks in Malaysia. Bank performance is proxied by ROA, ROE, debt ratio, and earnings per share. The results show that conventional banks outperform Islamic banks. Conventional banks recorded lower debt ratios than Islamic banks. This implies that Islamic banks have higher debt and are vulnerable.

Ibrahim (2020) examines the performance of Malaysian Islamic banks from 2003 to 2016. This study examined 21 conventional and 16 Islamic banks operating in Malaysia. The performance indicators used in this study are net interest margin, ROA, and NPLs for efficiency, profitability, and risk, respectively. This finding indicates that conventional banks recorded higher profits compared to Islamic banks. The presence of Islamic banks has a spillover effect in the banking sector. In addition, the establishment of Islamic banks seems to lower the risk in the banking sector. Thus, Islamic banks positively impact the Malaysian dual-banking sector. In contrast, the authors find that the profitability of conventional banks is low because of the presence of Islamic banks.

The Development of the Islamic Banking Sector in Malaysia

The development of Islamic finance in Malaysia began with the establishment of the Hajj Fund in 1963. The Hajj Fund was set up to accommodate Muslims to perform their pilgrim. Notably, BIMB was the first Malaysian Islamic bank established in 1983 (Laldin, 2008; Kunhibava, 2012; Al Nasser and Muhammed, 2013). Owing to the establishment of the Islamic bank, various initiatives and strategies have been implemented by the government and BNM to develop the Islamic finance industry. For example, the central bank provides and presents legal rights and Shariah advisory and supports research related to Islamic finance (Khan et al. 2021). Strategies and support from the Malaysian government and BNM enhance the development of Islamic finance by broadening the financial activities of Islamic banks. Later, BNM decided to introduce a new scheme called an “interest-free” banking scheme compliant with Shariah to commercial banks. Under this scheme, BNM allowed commercial banks to adopt and provide Islamic financial products. Consequently, commercial banks operate within Islamic windows. This action caused an increase in the number of Islamic banks, creating competition in the dual banking sector. Malaysia also launched the MIFC to attract international banks and achieve its aim of becoming an International Islamic finance hub. With the establishment of the MIFC, international banks can now provide Islamic financial products in other currencies (Khan et al. 2021).

In addition, BNM released a blueprint to enhance the development of the banking sector in the “Financial Sector Master Plan (FSMP)” in 2001. This blueprint prepares the banking sector for globalization and a competitive environment. The outlined strategy in the FMSP has made progress in the Malaysian banking sector. Supervision and regulations during the FMSP focus on the different institutions' risk, complexity, and size (BNM, 2011). More specifically, BNM and government focus on financial stability because instability can disrupt the banking sector. Moreover, to prevent instability, BNM strengthened the management of the risk and improved methodologies, data, and cooperation between interagency and region (BNM, 2011). In another initiative to improve stability, BNM recommended that financial institutions performed stress tests to determine whether financial institutions have sufficient financial buffers. The “Financial Sector Talent Enrichment Programme” aims to enhance the skills and research related to the banking sector, including Islamic finance. This program is undertaken by the Asian Institute of Finance to improve skills and training, while the ICLIF Leadership and Governance Centre aims to develop the skills and leadership of the board of directors and senior management in financial institutions. In 2001, the Islamic Banking and Finance Institute Malaysia was established as an academic and industry research center.

Moreover, liberalization in the Malaysian banking sector contributes to the development and progress of the banking sector, especially the Islamic finance sector. Consequently, Malaysia has become an international

hub for Islamic finance (BNM, 2011). Another contribution of Malaysia to enhancing Islamic finance is the

formation of institutions, namely, the International Islamic Liquidity Management Corporation and the Islamic Financial Services Board. These institutions aim to develop and enhance the stability of the Islamic financial system. To ensure that Islamic banking functioned well, BNM introduced specific guidelines for banks to operate efficiently, for instance, corporate governance procedures and established advisory bodies relate to Shariah compliance (BNM, 2003). Corporate governance is essential in the banking sector, as it helps to monitor the operation, risk, and effectiveness. According to BNM (2016), several regulations governed Islamic finance during the development of the industry.

They focus on the Shariah issuance related to financial products, review the framework of Shariah governance, and introduce the liquidity and capital standards. The initiatives, regulations, and guidelines of BNM and the Malaysian government have changed the Islamic finance sector, especially Islamic banking. The efforts that have made Malaysia an international Islamic finance hub reflect their contribution to global Islamic banking.

It has been accepted that country's policies and regulations will influence bank performance differently. This is due to the different levels of institutions that affect the banking sector. Thus, institutions play a significant role in influencing bank performance in terms of efficiency and/or stability. Keeley (1990) examines the impact of regulations on competition and stability. The finding indicates that regulations affect banks' risk-taking behavior and competition in the banking sector. Repullo and Suarez (2013) state that regulations are required to control risk-taking behavior. This is because the risk often leads to financial instability and/or crises. Khan et al. (2016) mention that financial instability can distort the payment system and credit facilities.

According to Barth et al. (2004), there are views on the institutions and/or regulations regarding banking activities. The first view implies that banks involved in broad banking activities will be difficult to discipline. This is because when banks are involved in various banking activities, they become powerful, which makes it challenging to discipline them. Therefore, broad banking activities have lower efficiency and competition. The second view is similar to the first, where the banks can engage in various banking activities. From this perspective, banks can explore economies of scale because of fewer restrictions. Consequently, the franchise value of the banks becomes high, and banks tend to engage in less risky portfolios because they can diversify their sources of income. These views indicate that institutions influence the efficiency and stability of the financial sector. In addition, Laeven and Levine (2007) state that diversification promoted by regulations can reduce risk or improve stability. In contrast to Demriguc-Kunt et al. (2003), strict regulations on banking activities increase the cost of financial intermediaries. Increasing the costs of financial intermediaries can influence bank efficiency. Hence, this affects bank stability. This implies that banks facing failure or insolvency tend to experience lower cost efficiency (Berger and Humphrey, 1992; Wheelock and Wilson, 1995). Furthermore, one of the contributions of this study is that we introduce the interaction term of institution efficiency to examine its impact on stability.

Moreover, previous studies focus on financial intermediaries and their impact on performance. Diamond's (1984) theory of financial intermediaries suggests that monitoring and screening borrowers can lead to fewer adverse selection and moral hazard problems. Adverse selection and ethical hazard problems influence bank performance in terms of their monitoring and screening costs. Hence, this will increase bank cost and performance, such as efficiency and/or stability. Hughes and Mester (2012) mention that for the banks to perform efficiently, they must obtain customer information related to financial aspects before approving their loan applications. However, rules, laws, and regulations can also enforce these activities. This finding shows that institutional quality plays a significant role in bank performance. Each country has its own institutions that can affect bank performance differently. For instance, institutions in developed and developing countries are different. Hence, banks' performance and/or efficiency also differ. In addition, Hughes and Mester (2012) mention that government regulation influences the internal and external mechanisms to discipline managers. For instance, organizational form, managerial compensation, and capital structure can have an internal impact, while competition and capital market are part of the regulations that can influence externally.

Interestingly, a recent literature review on financial intermediaries involves the diversification concept (Hughes and Mester, 2012). More specifically, the new theory of financial intermediaries includes diversifying risk by diversifying income. This indicates that diversification influences the risk-taking behavior of the banks.

Efficiency and Stability in Malaysian Islamic Banking

In the context of the Malaysian banking sector, BNM, issues policies and regulations to monitor the banking sector. Institutional factors contribute to the banking sector differently in terms of the type of business operation, such as conventional and Islamic. Implementing such institutions in Malaysian Islamic banks would be different. As Islamic banks' operations are Shariah-compliant, there is the SAC, another authority body that is important in the Islamic banking sector. For any policies or regulations related to Islamic banks and financial products, the SAC will discuss and decide on the rulings based on Shariah principles. Another role of the SAC is to supervise any related Shariah principles in Islamic banking along with BNM. These decisions influence the performance of Islamic banks in terms of efficiency and/or stability. Changes or the introduction of regulations somehow impacted the banks' operations, consistent with the theory of financial intermediaries.

However, studies on institutions and their impact on the performance of the Malaysian banking sector, especially Islamic banking, are still limited. Most previous studies focus on efficiency, stability, risks, and competition in the Malaysian banking sector. Ibrahim and Ismail (2020) examine the regulation and efficiency of Islamic banks in Malaysia from 2008 to 2013. Data envelopment analysis (DEA) is employed to compute the efficiency score. Regulatory quality and rules are chosen as proxies for institutions. In addition, the Maqasid Shariah index is used to examine its impact on efficiency. There are three categories under Maqasid Shariah: welfare, justice, and education (Antonio et al., 2012). To measure liquidity, the other variables included in the study are GDP, economic freedom index, total assets, total deposits, equity to total assets, and total financing per total assets. The findings show that the efficiency of the Islamic banks is related to the restriction activities. Moreover, the results indicate that higher regulatory quality has a positive impact on efficiency.

Sufian (2008) investigates the efficiency and risks in the Malaysian banking sector from 2001 to 2003. The variables employed are based on the DEA's intermediation approach to computing efficiency: personnel expenses, deposits, fixed assets, and LLP. Meanwhile, the outputs were investments and total loans. The author found that large banks were more likely to face scale inefficiency than small banks. In other words, large banks may incur higher operational costs because of their size. As for LLP, it increases the mean of the efficiency of the banks. The authors mention that the means of pure technical efficiency are sensitive or overestimated when we neglect the risk factor (Drake and Hall, 2003). Mokhtar, Abdullah, and Al-Habshi (2006) conduct another study on the efficiency of Malaysian Islamic banking from 1997 to 2003. The authors employed stochastic frontier analysis to compute the efficiency score. The variables are selected based on the intermediation approach. The inputs are total deposits and overhead expenses; meanwhile, the outputs are total earning assets. The results have shown that the efficiency of Islamic banks in Malaysia increased during the study period, and it was stable for conventional banks. However, conventional banks are more efficient than Islamic banks. In addition, the authors examine the efficiency scores of full-fledged Islamic banks and Islamic windows. The finding indicates that fully fledged Islamic banks are more efficient than Islamic windows. Moreover, the results suggest that the efficiency of domestic Islamic windows is lower than that of foreign windows. An extended study by Ismail et al. (2013) with regard to the efficiency of Malaysian Islamic and conventional banks from 2006 to 2009 utilizes DEA, which is a different method from Mokhtar et al. (2006). The inputs and outputs are personnel expenses, fixed assets, total deposits, loans, other earning assets, and an off-balance sheet. The findings are similar to those of Mokhtar et al. (2006), where the efficiency scores of conventional banks are higher compared to Islamic banks in terms of cost efficiency, pure technical efficiency, and technical efficiency. In contrast, Islamic banks are found to be efficient in terms of allocation and scale efficiency. This implies that Islamic banks are efficient in managing their resources. Capitalization improves the efficiency of Islamic banks, and banks' expenses result in lower efficiency for both banking sectors. In terms of loan quality and profitability, the results show a negative and significant effect on efficiency.

Next, Wahid (2016) also examines the efficiency of Islamic and conventional banks in Malaysia from 2004 to 2013 using DEA to compute the efficiency scores. These variables are almost similar to those used in previous studies. The results show that conventional banks are more efficient compared to Islamic banks. The result is consistent with Mokhtar et al. (2006) and Ismail et al. (2013), where conventional banks are established to be efficient compared to Islamic banks. However, Islamic banks recorded higher values than conventional banks in terms of scale efficiency. Bank size also plays a significant role in efficiency. This result is consistent with Sufian (2008), who finds that large banks are more efficient. In this context, large

and asset quality have a negative relationship with efficiency for both banking sectors. A similar study by Yahya et al. (2012) examines Malaysia's banking sector efficiency. The method used to compute the efficiency was DEA and t-test was employed to explore the efficiency differences between Islamic and conventional banks. The efficiency scores of conventional and Islamic banks are found to be almost similar. In other words, it was found that there were no differences in terms of efficiency between conventional and Islamic banks.

Furthermore, there are also studies of cross-countries regarding institutions, efficiency and stability that includes Malaysia in their sample. Alam (2013) investigates the impact of regulations on efficiency and risk in Islamic banking. The author used Data Envelopment Analysis (DEA) to compute the technical efficiency score. The findings show that regulations of the banking operations lead to higher technical efficiency in Islamic banks. On the other hand, restrictions or strict regulations reduced the risk-taking behaviour of Islamic banks. The main findings from this study are inefficiency and risks are found to be positive. It implies that efficient Islamic banks reduce their risks. It could be because of the monitoring and regulations impacting Islamic banking, where the banks operate efficiently to achieve stability.

Another cross-country study by Noor et al. (2020) related to bank regulations and supervision of the Islamic banks' efficiency in 26 countries. The period of the study was from 2004 to 2010. DEA is the method that the authors used to compute the efficiency score. The selected variables as inputs are fixed assets, deposits, and general and administrative expenses; meanwhile, the outputs are investments and loans. The indicators for regulation and supervision are similar to Alam et al. (2019). The result shows that regulations such as activity restrictions, private monitoring, and supervisory power positively impact the efficiency of Islamic banks. In other words, it means that high monitoring and restrictions improve the efficiency of Islamic banks. Furthermore, the authors revealed that Islamic banks in the Middle East and North Africa (MENA) recorded a negative relationship between capital requirements and efficiency. It indicates that stricter capital requirements lower efficiency. The technical efficiency of Islamic banks is higher compared to middle- and low-income countries. It suggests that Islamic banks are more efficient at managing their costs than other countries. Other indicators, such as official supervision and activity restrictions, were found to increase efficiency.

Alam et al. (2019) investigate the link between the regulations and Islamic banks' performance in Asia and Gulf Cooperation Council countries. The period of the sample from 2006 to 2015. The authors employ Shariah board members, Shariah law, and National Sharia supervisory as proxies for Islamic regulations, private monitoring, capital requirements, supervisory power, and activity restriction are indicators for bank regulation. Return on Assets (ROA) and Non-interest net revenue are the proxies for the performance. The result indicates that regulations and regulations positively affect the performance of Islamic banks in Asian countries compared to GCC. The size of the banks and capitalization are drivers of the performance of Islamic banks in the Asian region. The indicators of Islamic regulations are found to impact Islamic banks positively. In addition, Chowdhury and Haron (2021) also study the efficiency of Islamic banks within the Southeast Asia (SEA) region from 2014 to 2019. The finding shows that the efficiency and productivity of the Islamic banks in SEA have improved. More specifically, progress in productivity and better efficiency are recorded in Indonesia. Meanwhile, efficiency and productivity are decreased in Thailand and the Philippines. However, for Malaysian Islamic banks, the results indicate stability in efficiency and productivity during the study period.

METHODOLOGY

Data and Methodology

The sample for this study consists of 16 Islamic banks from Malaysia. The period of the study was between 2012 to 2020. During the period of the study, Islamic banking sector recorded increasing trend in terms of total assets from 20 percent to 28.9 percent (Islamic Financial Services Board, 2020). Increasing trend of total assets since 2012 indicates the growth of Islamic banking sector in Malaysia. Hence, it is crucial to examine the banking performance in terms of financial stability due to expansion of Islamic banking sector. The chosen variables are identified based on the previous studies to achieve the study's objective. Table 1 indicates the variables that are involved in this study.

Table 1 Variables, definition, and the sources

Variables	Definition	Sources
Dependent:		
Z-score (ZROA)	(ROA+EQTA)/standard deviation of ROA	Orbis BankFocus Author's Calculation
Non-Performing Loans (NPL)	Total loans/Gross Loans	
Institutional:		
Government Effectiveness (GE)	Perceptions of the quality of: i. Public services ii. Civil service iii. The degree of its independence from political pressures iv. Policy formulation and implementation v. The credibility of the government's commitment	World Bank
Regulatory Quality (RQ)	Perceptions of the ability of the government implement policies to promote development in private sector	
Rule of Law (RL)	Perceptions of whether agents have: i. Confidence and abide by the rules ii. Quality of contract enforcement iii. Quality of the property rights iv. Quality of the police and the courts v. Probability of crime and violence	
Bank-specific variables:		
Inefficiency (INEFF)	Total cost/Total Income	Orbis BankFocus Author's Calculation
Diversification (DIV)	Non-Interest Income/Total Income	
Size (TA)	Total Assets	
Capitalization (EQTA)	Equity/Total Asset	
Loans-to-total assets (TLTA)	Loans/Total Asset	
Deposits-to-total assets (TDTA)	Deposits/Total Asset	
Herfindahl-Hirschman Index of Assets (HHIA)	Market share based on total asset	
Macroeconomic Variables:		
GDP Per capita (GDPP)	Gross Domestic Products Per capita	World Bank
Inflation (INF)	Consumer Price Index	

Analysis Method

To measure the nexus between institutional, efficiency, and stability. System Generalized Methods of Moment (GMM) are used as it is appropriate for dynamic panel data.

$$Y = \alpha + \beta 0\ Yit\text{-}1 + \beta 1\ INEFFit + \beta 2\ INSt + \beta 3\ BSit + \beta 4\ Macroit + \varepsilon it \quad (1)$$

$$Y = \alpha + \beta 0\ Yit\text{-}1 + \beta 1\ INEFFit + \beta 2\ INS_t{*}EFFIit + \beta 3\ BSit + \beta 4\ Macroit + \varepsilon it \quad (2)$$

The dependent variable is Z-score (ROA) used as a proxy for bank stability. The Z-score measurements is based on return on assets (ROA) and using a three-period rolling window similar to Soedarmono et al. (2013), and Noman et al. (2018). Additionally, NPL is employed as a dependent variable and credit risk indicator for the robustness check. NPL is the ratio of impaired loans to gross loans following the work of Chaibi and Ftiti (2015) and Mutarindwa et al. (2020). The higher the value of NPL, the higher the probability of the banks having default loans. Hence, it will negatively impact banking stability. INEFF is the efficiency indicator measured by the cost of income. The lower the ratio, the higher efficiency. INS is the institutional quality indicator extracted from the World Bank database. The variables for institutions are fixed across the study because the sample only includes one country. The value is between -2.5 and 2.5. The higher the value, the better the institutional development. The institutional variables involved in this study are Regulatory Quality (RQ), Government Effectiveness (GE), and the rule of law (RL). Both variables are expected to have an impact on the stability of the banking sector. As for bank-specific variables, we include total assets (size), equity to total assets (EQTA), loans to total assets (TLTA), deposits to total assets (TDTA), non-interest income to total income (DIV), and Herfindahl-Hirschman Index (HHIA) for market structure. Macroeconomic variables are Gross Domestic Product (GDP) per capita and inflation. In this study, interaction terms of institutional and efficiency because, from the literature review, institutional influences the efficiency and the cost of financial intermediaries. Furthermore, efficiency is also related to the costs of operation in banking. Hence, efficient institutions and efficiency will enhance the stability of Islamic banking.

The analysis involves regressing equations (1) and (2) using the system GMM estimator by Arellano and Bover (1995), and Blundell and Bond (1998). The main advantage of this methodolody is its ability to overcome the endogeneity problem. The Sargan test tested the validity of the model. As for serial correlation, the first and second serial correlations were used to test the autocorrelation problem. If second-order serial correlation indicates insignificant results or the null hypothesis cannot be rejected, the model does not have an autocorrelation problem.

FINDINGS

Descriptive Statistics

Table 1 shows the descriptive statistic of each variable, and the regression results by system GMM are shown in Table 2. The table above shows the descriptive statistics of the variables. For inefficiency, the most efficient score is 0.31, as the lowest inefficiency score dictates efficiency. The highest Z-score of ROA is 44.1868, and the minimum is 6.3445. It shows that Islamic banks in Malaysia achieve stability or better performance. For loans to total assets, the minimum is 0.0782, and the maximum is 0.8325; for deposits to total assets, the minimum is 0.3858, and the maximum is 0.9367. For macroeconomic variables, Malaysia's highest GDP per capita is 1414.2, and the inflation faced by Malaysia is 3.87 per cent. Overall, we can conclude that economic conditions in Malaysia are stable as the inflation rate is less than five per cent. Next, for the variables that represent institutional quality in Malaysia. In this study, government effectiveness and regulatory quality are chosen. The highest score for government effectiveness is 1.11, and the minimum is 0.83. Meanwhile, as for regulatory quality, the highest score is 0.84, and the minimum is 0.57. The government effectiveness and regulatory quality score imply strong with a maximum of 2.5 and weak if the score exceeds -2.5.

Table 1 Descriptive statistics

Variables	Mean	Standard deviation	Min	Max
Z-score (ZROA)	17.7332	8.4422	6.3445	44.1868
Non-Performing Loans (NPL)	0.0201	0.0206	0.0031	0.1561
Inefficiency (INEFF)	0.5879	0.1953	0.31	1.5
Government Effectiveness (GE)	0.9778	0.0887	0.83	1.11
Regulatory Quality (RQ)	0.7078	0.0736	0.57	0.84
Rule of Law (RL)	0.5411	0.0713	0.44	0.66
Diversification (DIV)	0.3093	0.1135	0.0109	0.7262
Size (TA)	11002.13	11676.74	1704	63601
Capitalization (EQTA)	0.0865	0.0342	0.04	0.21
Loans-to-total assets (TLTA)	0.6778	0.0861	0.0782	0.8325
Deposits-to-total assets (TDTA)	0.8475	0.084	0.3858	0.9367
Herfindahl-Hirschman Index of Assets (HHIA)	1264.94	76.7521	1122.9	1357.59
GDP Per capita (GDPP)	10703.63	584.69	9817.79	11414.2
Inflation (INF)	1.7096	1.3822	-1.1387	3.8712

Estimation Results

For model (1), the regression result shows that government effectiveness, regulatory quality, the rule of law, capitalization, loans to assets, diversification, HHI for market structure, and inflation recorded statistically significant on Z-score (ZROA) (see Table 2). This suggests that these variables have a substantial role in explaining financial stability of Malaysian Islamic banking. Institutional variables such as government effectiveness and regulatory quality are found to be negative and significant on the stability. It reflects that higher government effectiveness and regulatory quality contribute to lower financial stability. As for the rule of law, it was found that this variable shows that strength in regulation could improve stability, and the sign of the positive coefficient of the rule of law reflects it. These findings contradict Boulanouar, Alqahtani, and Hamdi (2021), where the authors found positive and significant for government effectiveness and regulatory quality on financial stability and negative for the rule of law. Several bank-specific variables such as capitalization, loans-to-total assets, and diversification income recorded positive and statistically significant. In contrast, the market structure represented by HHI recorded a negatively significant on stability. A higher share of capitalization,

loans-to-total assets, and diversification are found to improve the stability of Islamic banking.

Table 2 Impact of efficiency and the interaction with the institutional quality on stability (inefficient/efficient)

Dep:	ZROA		NPL	
	-1	-2	-3	-4
L.1	0.0309	-1.5689***	0.3897***	0.2492***
	-0.17	(-4.97)	-5.76	-3.09
INEFF	0.0179		0.0086*	
	-0.38		-1.65	
GE	-8.3061***		-0.2616*	
	(-9.51)		(-1.84)	
RQ	-11.644***		-0.4293*	
	(-24.21)		(-1.81)	
RL	19.5851***		0.6750*	
	-21.48		-1.85	
INEFF*GE		-0.8087**		-0.012
		(-1.96)		(-0.41)
INEFF*RQ		-10.8132***		0.0401
		(-3.87)		-0.75
INEFF*RL		17.1333***		-0.0245
		-4.97		(-0.60)
EQTA	0.4679***	0.9065***	-0.0169	0.0114*
	-3.05	-6.27	(-1.14)	-1.84
TA	-0.0428	0.2395***	-0.0202*	0.0145*
	(-1.22)	-3.36	(-1.80)	-1.91
TLTA	1.2015*	-0.2799	-0.0176*	-0.0382***
	-1.92	(-0.96)	(-1.61)	(-4.45)
TDTA	0.0156	-1.5046***	-0.001	-0.0238**
	-0.13	(-2.94)	(-0.14)	(-2.41)
DIV	0.1547***	0.0469	-0.0074**	-0.0100***
	-3	-0.53	(-2.30)	(-3.97)
HHIA	-16.2106***	9.3747***	-0.4999*	0.006
	(-6.23)	-5.36	(-1.78)	-0.31
GDPP	-0.9205	-7.8082***	0.0833*	-0.0065
	(-1.13)	(-6.82)	-1.67	(-0.31)
INF	0.2242***	0.3959***	0.0141*	-0.0027
	-5.01	-2.92	-1.62	(-1.27)
CONS	135.25***	11.7702*	3.1311*	-0.0999
	-11.2	-1.84	-1.79	(-0.41)
AR(1)(p-value)	-1.1561	-2.222	-1.3593	-1.225
	-0.2477	-0.026	-0.174	-0.2206
AR(2)(p-value)	-0.3839	1.231	1.6224	1.4671
	-0.7	-0.2183	-0.1047	-0.1423
Sargan	3.1746	8.3371	1.7082	3.3505
(P-value)	-1	-0.9996	-1	-1
Observations	112			

Notes: ***, ** and * indicate significance level at 1%, 5% and 10%, number in parenthesis is T Statistic

In other words, higher capitalization can reduce banks' risk-taking behaviour. Hence, it will improve financial stability. The finding is consistent with Lassoued (2018), Bermpei et al. (2018), and Nguyen (2021). Next, for loans-to-total assets, the result shows a positive relationship between the loan-assets ratio and the stability of Islamic banking. It is consistent with previous studies such as Noman et al. (2017) and Phan, Anwar, Alexander, and Phan (2019). The positive correlation between the loan-assets ratio on stability shows that banks with higher loan-assets ratios can improve stability as the banks earn income by holding the loan share, according to Phan et al. (2019). The banks can diversify from the income to reduce the risks or instability. It reflects the positive sign and significance of diversification on stability, indicating that Lassoued (2018), Yunan (2020), Nguyen (2021), and Boulanour et al. (2021) also found similar results on diversification on financial stability. Next, as for the market structure, the regression result indicates negative and significant stability. In other words, it reflects that less concentrated markets or competition improve stability. The finding is consistent with Lassoued (2018) and Nguyen (2021).

Next, we examine the regression result of model (3) with a different dependent variable, NPL. The lagged dependent of NPL is significant and shows that the previous value of NPL influences the current value of NPL. In contrast with the regression result of model (1), an inefficiency variable recorded positive and significant on the NPL. It shows that inefficient banks are likely to increase credit risks which indicated by NPL. The findings are similar to Reboredo (2004), Alam (2013), Noman et al. (2017), and Bilgin et al. (2021) but contradict Lassoued (2018). Inefficient banks fail to manage operation costs, which induces them to be involved in riskier projects due to lower profitability or income. Institutional quality variables are found to be significant.

Meanwhile, government effectiveness and regulatory quality were found to be significantly negative.

The result contradicts the finding of model (1) and Boulanouar et al. (2021) for government effectiveness, which the authors found to be insignificant. However, the result for regulatory quality is similar to Boulanouar et al. (2021). As for the rule of law, the variable recorded positive and significant result. In other words, weak law decreases the banks' risk-taking behaviour or improves stability. Similar to the result of model (1), several bank-specific factors records significant effect on financial stability. Total assets (i.e., a proxy for size), loans-to-assets ratio, diversification, and HHI, recorded negative and statistically significant result. The larger the size of the banks in terms of total assets, the more stable the banks will be (i.e., lower NPL). This implies that larger banks can diversify their income and manage costs to prevent instability or involvement in riskier projects. The coefficient of diversification reflects that higher diversification will reduce risks. As for the market structure, it was found that less concentration tends to increase instability. It shows that banks with market power tend to be prudent in risk-taking. The regression result on bank size in model (3) is consistent with Noman et al. (2017) who used the same dependent variable. However, the result for loans-to-assets ratio is no in line with Noman et al. (2017), while the result for diversification is consistent with Nguyen (2021) and Yunan (2020). For macroeconomic variables, GDP per capita and inflation recorded a positive relationship with NPL. This means that the higher the income (in terms of GDP per capita), the lower the banking stability. This finding is consistent with Noman et al. (2017), Nguyen (2021), and Bilgin et al. (2021). Moreover, the result reveal that the bank risks tend to increase during inflation as inflation can hamper the economic condition (Bilgin et al., 2021).

The interaction term between inefficiency and institutional variables were assessed in models (2) and (4) with different proxies of dependent variables. In model (2), the lagged dependent of the Z score recorded a negative and significant coefficient. It shows an influence of past Z-score on the current Z-score in terms of stability. The three interaction terms in model (2) were found to be statistically significant. The interaction between inefficiency and government effectiveness and regulatory quality was negative and significant. It indicates that lower government effectiveness and regulatory quality in the environment of inefficient Islamic banking sector can enhance stability. In other words, unrestrained activities or regulations could influence the operation of the banks to become more efficient and stable. On the other hand, Ibrahim and Ismail (2020) found that regulatory quality increases efficiency; this reflects that efficiency and regulatory quality play a significant role in determining stability based on Model 2. Next, for the inefficiency and the rule of law, it was found that strong law and an inefficient banking sector can increase stability. In other words, inefficient banks in an environment of better regulation will increase stability, consistent with Ibrahim and Ismail (2020). The authors also found that a strict rule of law reduces efficiency. It reflects the interaction of inefficiency and the rule of law where the effective or the strong law reduces the efficiency of the banks. Hence, it will affect the performance of the banks. Furthermore, this can be explained by the variables of HHI and size, where it recorded positive and significant stability with the proxy of Z-score. The larger the banks and the more concentrated the banking sector, they tend to neglect their efficiency performance, as in the 'Quiet Life' hypothesis. Another variable, such as deposits-to-assets, is negative and significant, similar to Soedarmono et al. (2013). As for GDP per capita and inflation, both variables respond differently to stability based on the regression result in a model (2). GDP per capita recorded negative and significant stability, whereas inflation positively impacted financial stability. It means that the higher GDP per capita enhances the instability of the banking sector. It is consistent with Nguyen (2021) findings, where the authors found that developed economies tend to involve in riskier portfolios as this increases their risk-taking behaviour. It is reflected to well-developed Malaysian Islamic banking sector as well. However, for inflation, the result contradicts Yunan (2020), Mutarindwa et al. (2020), Bermpei et al. (2018), and Noman et al. (2017) as the finding indicates inflation improve the stability of the Islamic banking sector.

The lagged dependent recorded significance result in model (4), similar to the result for model (2). However, the sign is contradicted. Moreover, the interaction term of inefficiency and institutional performance was insignificant. It indicates that the role of efficiency and institution does not strongly impact the NPL of Islamic banking. Bank-specific variables recorded significantly were capitalization, size, loans-to-assets, deposit-to-assets ratio, and diversification. Capitalization and size recorded positive and statistically significant effects on the NPL. It indicates that banks have higher capitalization and large sizes increase the risks, which could hamper stability. More specifically, dominant banks having higher capitalization may increase their risk-taking behaviour. For instance, large banks decide to involve themselves in riskier projects to maintain the

capitalization level. However, the result of capitalization and size contradicts the finding in Noman et al. (2017), Bermpei et al. (2018), and Phan et al. (2019). The remaining three variables of bank-specific factors recorded negative and significance effects. These show that loans-to-asset, deposit-to-asset ratios, and diversification lead to stability in Islamic banking. These results contradict Noman et al. (2017) but are consistent with Bermpei et al. (2018) and Soedarmono et al. (2013) for loans-to-assets. As for deposits-to-assets, the finding contradicts Soedarmono et al. (2013), where the authors found the opposite.

Discussion

This study used three variables institutional variables (i.e., government effectiveness, regulatory quality, and the rule of law) and evaluate their impacts on banking performance in Malaysia. In Malaysia, the central bank of Malaysia (BNM) is the one who regulates and monitors the performance of the banking sector. BNM is also the one who is responsible for issuing policies to ensure financial stability. Based on the regression result in Table 2 (Model 1 and 2), indicators such as government effectiveness, regulatory quality and the rule of law indicate a significant impact on the financial stability of the Islamic banking sector in Malaysia.

More specifically, government effectiveness and regulatory quality could deteriorate financial stability. The efficient institution contributes to lower financial stability in Malaysia. It could imply that efficient institutions in terms of competition, public confidence, and business environment influence negatively on financial stability. This also reflects that the competitive environment under a stable government encourages Islamic banks to attract customers. This situation would increase the moral hazard problems especially in credit markets (Jagannath and Maitra, 2023). These results are consistent with Jagannath and Maitra (2023) and Ashraf (2017) where the authors also found high government effectiveness influences on credit risks. The authors mention that banks are confident in making decisions under a stable environment because of less interference from the government. Islamic banks must compete in dual banking to maintain financial stability or increase their profitability. The findings indicate that and financial stability can be achieved when government interfere or monitor decision making from Islamic banks.

As for the rule of law, it was found to increase stability. It means that the enforcement of the policies and regulations in Malaysia is efficient, which can enhance financial stability. The guidelines issued by BNM regarding Islamic banks may improve financial stability. For instance, Wakalah, Murabaha, and Istisna during the sample period. Conversely, the results in model (3), where the dependent variable is NPL, produce different results from the model (1). The result differs due to varying proxies of stability. In addition, it could be due to the institution's impact on different proxies.

The main research question from this study is whether the impact of institutional and the effect of efficiency could foster financial stability in Malaysian Islamic banking. Based on the regression result from system GMM in Table 2, it was found that institutional quality (government effectiveness and regulatory quality) and inefficiency negatively impact the performance of Islamic banking in models (1) and (2). It means that effective policies and regulations with the inefficient condition of Islamic banking sector in Malaysia deteriorates stability based on Model (2). It is consistent with Demirguc Kunt et al. (2003), where stricter regulations increase the cost of financial intermediaries, it will become inefficient and influence instability. However, when the dependent variable was NPL, it was found that effective regulations (government effectiveness and regulatory quality) improve the stability or reduce the risk-taking behaviour of Islamic banking in the model (3). This result is consistent with Alam et al. (2019), where high effectiveness and monitoring from the government improve the efficiency of Islamic banks. Hence, it positively affects the stability of the Islamic banking sector. The remaining institutional variables in the model (3), such as the rule of law, are recorded as opposite compared to other institutional variables. The findings indicate that strong law leads to instability. It could happen when the Islamic banks abide by the law in Malaysia and try to reduce risk-taking behaviour, then hamper the financial stability of Islamic banking.

As for the interaction term of the rule of law and inefficiency in the model (2), the results show that a stricter environment with inefficiency could enhance stability. In other words, it is difficult for banks to operate efficiently in a strict environment (Hauswald and Marquez, 2006), affecting their performance. This evidence is supported by Alam (2013), where the author found a positive relationship between inefficiency and risks. As for bank-specific variables, the empirical evidence from the regression result in Table 2 indicates that these variables have a significant role in the financial stability of Malaysian Islamic banking. HHI is used as a proxy

for market structure or market concentration. It was found that higher concentrated markets in Islamic banking deteriorate the stability shown in model (1). The result supports the view of 'competition-stability' where the dominant banks tend to set the interest rates and involve themselves in riskier portfolios. Models (2) and (3) indicate that less concentrated markets lower stability. These results are consistent with the view of 'competition fragility'. As for diversification of income, it was found that the result in model (3) indicates diversification can be managed efficiently to achieve stability (low NPL).

The findings show that institutional influence influences Islamic banking performance even though the result is different due to the proxies of financial stability. It also indicates that excellent institutions do not necessarily bring better outcomes. As for the rule of law (models 1 and 2), enforcing the regulations contributes to stability. It might be due to public confidence and security in enforcing regulations related to the banking sector. It shows that public trust enhances the stability of Islamic banking, which can prevent bank runs or crises. Any regulations and policies issued by the authority bodies must ensure the sector operates well. In the case of the banking sector, regulations and policies affect the efficiency and stability of the banks. Previous studies produce mixed evidence on the institution's impact on the banking sector.

CONCLUSION AND RECOMMENDATION

This study contributes to the literature on institutional and efficiency effects on the performance of Malaysian Islamic banking. The period of the study is from 2011 to 2020. Based on the regression result, it shows that institutions with the condition of banks efficiency have different effects on the financial stability. It could be due to the type of indicators used to measure financial stability. The main findings indicate that institutional variables (i.e., government effectiveness and regulatory quality) negatively affect financial stability (ZROA) under the condition of inefficient Islamic banks. Meanwhile, government effectiveness and regulatory quality have a positive relationship with the financial stability in the inefficient banking sector based on regression results in Model (3). Moreover, the rule of law improves financial stability (ZROA) which suggest that stricter rule enhances stability. As for financial stability measured by NPL, it was found to be the opposite. In term of policy implications, the findingds suggest that Bank Negara Malaysia and the Malaysian government should be aware of the impact of various policies regarding Islamic banking activities as the institution affects performance differently. In addition, different institutional factors influence different financial ratios. The authorities should consider these before announcing the rulings, policies, and new regulations.

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