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# Profitability performance of full-fledged islamic banks and economic growth in malaysia: a panel data approach

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**ABSTRACT**

This research aims to investigate the influence of return on assets, return on equity and net profit margin on economic growth in Malaysia. The secondary data for this study were collected from annual reports of the five full-fledged Islamic banks in Malaysia for six years (2016-2021). This study employs panel data regression by indicating a random effect model as the best estimator. The findings of the panel regression analysis show return on assets (ROA) and net profit margin (NPM) of full-fledged Islamic banks in Malaysia have positive and significant effects on economic growth. Therefore, this proves solid evidence that Islamic banking institutions and their financial performances are one of Malaysia's economic growth channels. It will motivate many people to go for Islamic banking rather than conventional ones, given its contribution to the country's economic growth. From another perspective, Islamic banks too will inspire and be taken into consideration by the conventional banks towards opening Islamic windows to meet Malaysian's growing demand.



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## 1. INTRODUCTION

### 1.1 Introduction

Islamic banking, also referred to as Islamic finance, is a banking system or financial activities that adhere to its underlying principles following Shari'ah Islamic law. The underlying principles governing Islamic banking are mutual risk, profit sharing, and fairness assurance, and those transactions are based on underlying business activity or assets. Over the years, the Islamic finance and banking industry has grown in size and numbers. International Monetary Fund (2017) [1] mentioned that Islamic finance had grown systemically despite its small share in the global financial market, particularly in Asia and the Middle East. It is emphasized and regarded as one of the key contributions of economic activity and thus plays a significant part in financial and economic growth and development.

According to the Islamic Financial Services Board (IFSB) (2022) [2] in the latest IFSI stability report, the Islamic financial services industry demonstrated resilience, in this case, during the COVID-19 pandemic, which grew about 11.3% year-on-year, estimated at USD 3.06 trillion in 2021. Islamic finance assets, therefore, continuously grew in many regions until last year as can be seen from the Table 1. While the development of Islamic banking worldwide continued expanding with a 6.5% growth estimated at USD 2.10 trillion, it retained the highest share (68.7%) of Islamic financial services industry (IFSI) assets.

Table 1. Islamic finance assets by region

| Region | Islamic Finance Assets (%) |
|---|---|
| Gulf Cooperation Council (GCC) | 52.4 |
| South-East Asia | 23.5 |
| Middle East and South Asia | 17.4 |
| Africa | 2.1 |
| Others | 4.5 |

Source: Islamic Financial Services Industry (IFSI) Stability Report [2]

Shares of GCC countries' Islamic banking assets remained the highest and increased to 57.6% (4Q'20: 53.2%) of global Islamic banking assets. The region registered a growth in Islamic banking assets of 23.7% year-on-year to end 4Q'21 with a value of USD 1,212.5 billion (3Q'20: USD 979.9 billion) (Figure 1). Except for the UAE, all the GCC countries recorded increased asset size in 2021. The region's dominance is expected as all the GCC countries have a systemically important Islamic banking sector that plays a vital role in the region's various economic transformation and diversification agendas.

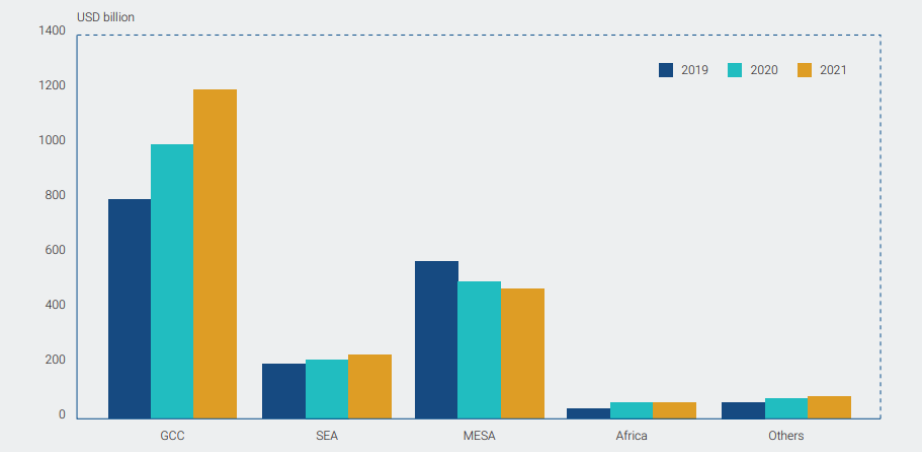


Figure 1: Regional islamic banking assets (USD Billion) (2019-2021)
Source: Islamic Financial Services Industry (IFSI) Stability Report (2022)

In Malaysia, the Islamic financial industry has encountered a newly developed transformation, becoming one of the country's significant components of the financial system. This industry triggers the growth and development of the country. During the 3rd Asia-Pacific Economic Statistics week, the Department of Statistics Malaysia (2019) [3] demonstrated that Malaysia leads by a comprehensive Islamic finance system (Figure 2), comprising Takaful, Islamic mutual funds, Global Sukuk and Islamic Banks. Malaysia has also become one of the primary references and education for Islamic finance worldwide.

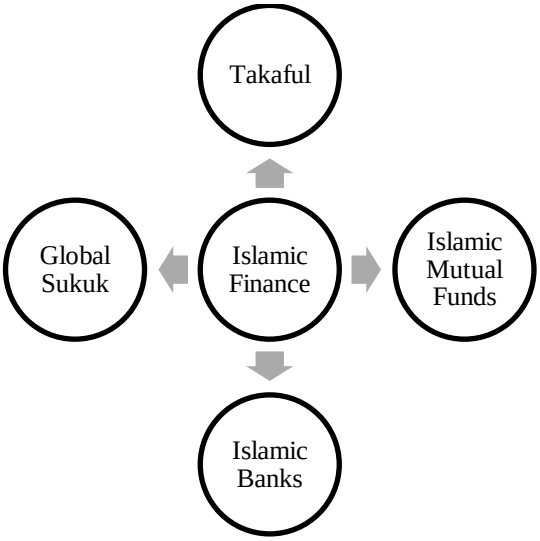


Figure 2: Islamic finance system
Source: Department of Statistics Malaysia (2019) [3]

According to S&P Global Ratings (2022) in Islamic Finance Outlook Report, in the past decade, the driving force of expansion of credit among banks in Malaysia has been led by Islamic banks. This direction should be consistent despite the COVID-19 pandemic recently. This trend will likely increase and double for Islamic banks (i.e., 10% or more) in the coming years. Figure 3 illustrates the loan growth of the banking industry in Malaysia and Islamic banks gaining more shares in the market, with more than 36% of the bank's assets at the end of 2020.

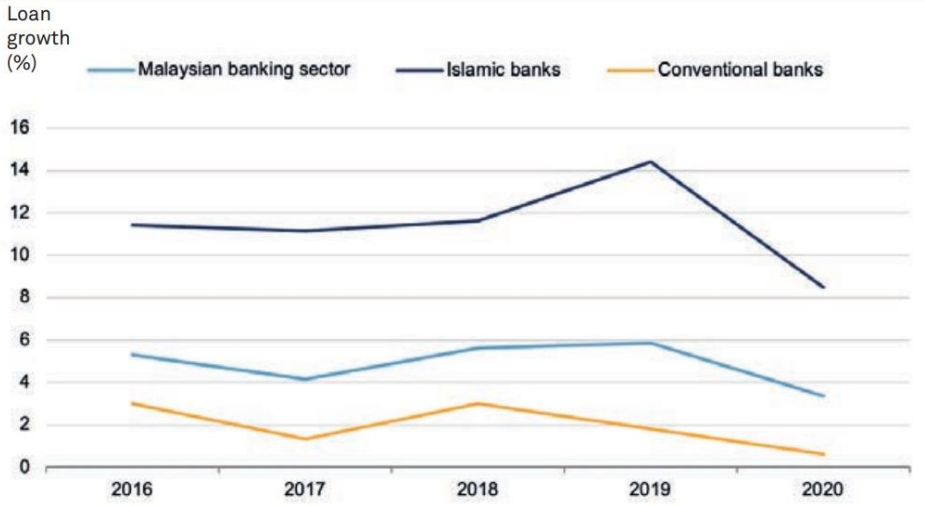


Figure 3: Loan Growth of Banking Industry in Malaysia (2016-2020)
Source: S&P Global Ratings (2022) [4]

Looking back to 2007-2008, the global financial crisis (GFC) resulted in extreme distress to the global financial market and disruptive international financial entities worldwide. However, Islamic financial institutions (IFI) were less harmed and secured by their fundamental operating principles of risk-sharing and eliminating leverages and risky financial products (Malaysia International Islamic Financial Centre, 2015) [5].

International Monetary Fund (imf) [6] also conducted a study to compare both conventional and Islamic banks' performance before and after the global financial crisis and found that Islamic banks, on average, exhibited stronger resilience during that period. Figure 4 depicts conventional and Islamic banks' average return-to-average assets ratio before the crisis. The period was between 2005 to 2007, and it was found that Islamic banks have better performances in return-to-average assets ratio compared to conventional banks.

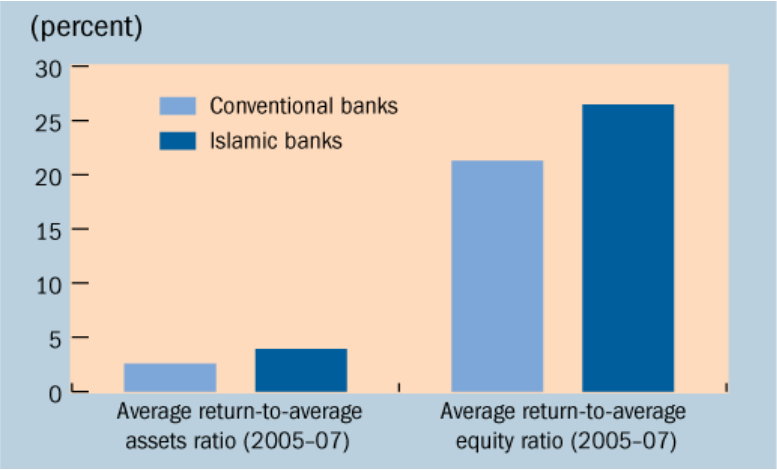


Figure 4: Average return-to-average assets ratio of conventional and Islamic banks before the crisis (2005-2007)
Source: International Monetary Fund (IMF) [6]

The evidence during the crisis then portrays the profits, credits, and assets changes for two years from 2007 to 2008 (Figure 5). At the early stage of the crisis, the figure portrayed a minor impact on Islamic banks' profitability, while credit and asset growth remained strong.

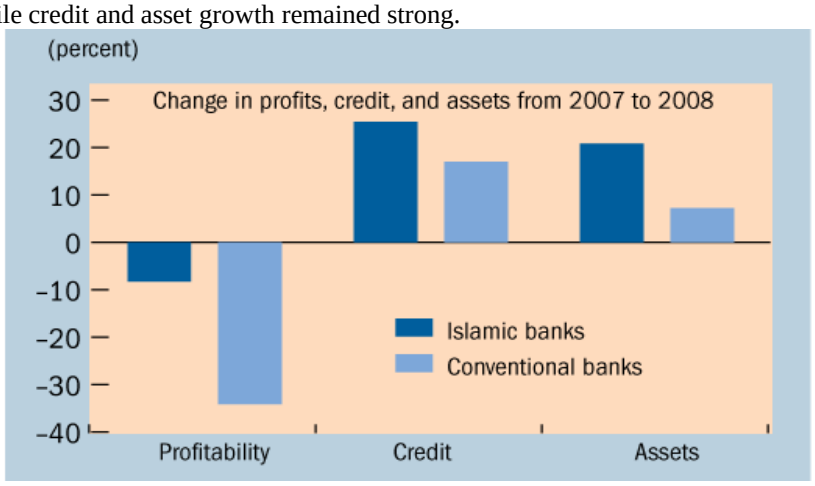


Figure 5: Change in profits, credits, and assets during initial of the crisis (2007-2008)
Source: International Monetary Fund (IMF) [6]

More recently, as the consequences of the financial crisis, many scholars have started examining Islamic finance or banking and economic growth worldwide. Studies on Islamic finance widely cover impact [7], [8] and contributions [9], as well as development [10]–[12] and performance [13] of various aspects in the sector of Islamic banking and finance on the economic growth of countries all over the world.

However, the study on Islamic banking profitability performance and economic growth, particularly in Malaysia, still needs improvement. This paper is then concerned with filling the gap in which the objective is to determine the relationship between Islamic banking profitability performances and economic growth in Malaysia. The limitation of this paper is that it covers only full-fledged Islamic banks in Malaysia and discovers their profitability performances on economic growth in recent years of 2016 to 2021 [14].

In line with the objectives of this paper, it can be proven empirically that aside from conventional banking, Islamic banking and finance can be an alternative to the system with its principles of equality, justice, honesty, and the mechanism of profit-sharing. These principles are as crucial as implementing them throughout conducting Islamic banking and finance operational activities. In addition, having a banking and financial system that is fair and feasible for the financial markets is very important. Continuous research and

development in this field will significantly contribute to the bright future of Islamic banking and finance for the welfare and needs of the community.

The paper is divided into five sections. The first section briefly contains the overview of the study. Next, a literature review of past or previous studies has been explained in Section II, and it is concluded by extracting the gap of the research found in the literature. Section III explains in detail the methodology, model of econometrics, and statistical analysis tool performed to satisfy this research's objectives. Section IV details the analysis of the results and findings of this study. Last but not least, the last section summarizes this study's findings, including limitations and recommendations for future research.

### 1.2 Literature Review

Many empirical studies have examined various aspects of Islamic finance or banking and economic growth using different methodologies, such as time-series regression analysis, autoregressive distributed lag (ARDL), generalized method of moments (GMM), and others. This section summarizes the literature on bank-specific, financial, and macroeconomic determinants of Islamic banks' financial performance and Islamic finance on economic growth. The relevant research gap in the literature has been identified after reviewing past research.

#### 1.2.1 Overview of Islamic Banking and Finance

Islamic banking can be described variously in many ways. According to the General Secretariat of the Organization of the Islamic Conference (OIC), Islamic bank is a financial institution whose legislations, principles, and practices state its participation in the Shari'ah principle. It abides by the prohibition on receiving and paying interest on any of its operations [15]. Meanwhile, according to the Islamic Banking Act of 1983 [16], Islamic banking is defined as an entity that conducts Islamic banking business. Islamic banking refers to a business whose goals and operations do not include any elements prohibited by Islam. According to the two definitions, Islamic financial institutions are entirely predicated on Shariah principles. It must include the following principles but is not limited to,

(i) The prohibition of unjustified increase or interest (riba'),
(ii) Avoidance of uncertainty and speculation (gharar),
(iii) Permissible or lawful in Islam (halal) activities, and
(iv) Focusing on justice and other ethical and religious goals.

Next is a general overview of Islamic banking contracts; the Islamic banking system was founded on the legal and constitutional regulations that regulate any contracts of Islamic economic or financial dealings. In Islamic banks, profit-and-loss-sharing systems such as musharakah and mudarabah are in place. Even so, the market has compelled them to use the majority of instruments with fixed returns, including such ijarah, murabahah, and diminishing musharakah. Islamic bank deposits are primarily raised through mudarabah and, to a lesser extent, through wakalah or qard al ithmar. Mudarabah or musharakah is used to fund savings and investment deposits, whereas qard is used to fund current deposits (loans). These funds are used for various investments, including mudarabah, musharakah, murabahah, ijarah, and diminishing musharakah. The following Table 2 listed the definition of the mentioned concepts in Islamic banking for a better understanding of the reader but is not limited to:

Table 2. Islamic banking concepts

| | Islamic Banking Concepts | Definition |
|---|---|---|
| 1. | *Mudarabah* | A partnership agreement between the provider of the capital with an entrepreneur in which the former contributes capital to an enterprise or operation organised by the latter. Revenue made by that organisation or activity is distributed in accordance with the proportion agreed upon in the contract. In contrast, the losses are to be considered by the provider of capital, except if the losses resulting from improper conduct, neglect, or the breach of a contractual term. |
| 2. | *Musharakah* | A partnership agreement whereby the parties involved consent to provide capital to an existing or new business. The profits are divided through compliance with the proportion stipulated in the *musharakah* agreement, while losses are distributed in ratio to share of each partner's capital. |
| 3. | *Murabahah* | An exchange contract or agreement of sale and purchase in which the cost-plus-profit is disclosed to the client and agreed upon between the parties. The payments can be made in full or in instalments. |
| 4. | *Ijarah* | An agreement made to lease the use of a specified asset for an agreed-upon period in return for a specified rental. It may precede a unilaterally conditional written agreement by one of the contractual parties. The *ijarah* contract binds both contractual parties. |

| | | |
|---|---|---|
| 5. | Diminishing *Musharakah* | A type of partnership when one of the partners guarantees to buy the equity share of the other partner over a period. It is until the buying partner obtains complete ownership of the equity. The contract begins with the formation of a partnership, followed by the purchase and sale of the other partner's equity at market value or at an agreed price upon at the time of contract entry. The "buying and selling" is separate from the partnership contract and should not be specified in the partnership contract because the buyers can only promise to buy. One contract will not be entered into as a condition for concluding the other. |
| 6. | *Wakalah* | A contract of agency in which the principal (customer) assigns an entity to function as a representative or agent (wakil) on his behalf. The contract can be for or against a fee. |
| 7. | *Qard* | A loan agreement between two parties to promote social integrity while meeting the borrower's short-term financial needs. The amount due must be the same as the loan amount from the creditor. |

Source: Islamic Financial Services Industry (IFSI) Stability Report (2022)

Recent studies on the Islamic banking and finance include a study by Komijani and Taghizadeh-Hesary (2018) [17] explaining the overview of Islamic banking and finance in Asia. Over the last two decades, the Islamic finance industry has expanded with the increasing Muslim population in Asia, especially Southeast Asia. The research stated that the popularity of Islamic finance in Asia is expected to grow further with the rapid growth of the Muslim population and the improvement of living standards as an alternative to conventional financing. Other factors include solid political support, increasing demand of investors seeking to invest in Islamic financial products, and generous tax, given that the Islamic finance industry implies risk-sharing aspects compared to the conventional ones.

The Islamic finance industry has grown substantially over the years from an interest-free financial structure until now, with the Islamic Financial Institutions (IFIs) establishment. In the IMF [1] working paper on the topic of An Overview of Islamic Finance, the authors [18] mentioned that the ultimate goal of this system is expressed in laudable social terms. For example, the promotion of economic well-being, poverty reduction, fulfilment of basic human needs, optimization of natural resource utilization, implementation of universal brotherhood, spiritual needs fulfilment, and economic and social justice.

Moreover, the interest-free products of the Islamic banking sector strongly captivated capital investments in many countries. Rogoff (2011) [19] observed that the industry of this Shari'ah banking remained stronger in its assets share, although in the recession-era and more capital investments were involved in Islamic products. The key feature of Islamic banking is that it provides a more significant risk-sharing percentage, decreases loan dependency and restriction the financing gap, short-term and long-term financing.

### 1.2.2 Islamic Banking and Finance in Malaysia

The global development of Islamic finance has directly influenced the development of Islamic finance and banking in Malaysia. The best to describe Malaysia is a unique country which operates alongside both systems of banking; conventional and Islamic. Tabung Haji is the first Islamic financial institution established in Malaysia in 1963, followed by the first Islamic bank to begin its operation in 1983, Bank Islam Malaysia Berhad (BIMB) [3]. Consequently, the Islamic finance and banking industry has witnessed immense acceptance, demand, and development growth since 1963.

The Islamic financial industry has encountered a newly developed transformation, becoming one of Malaysia's significant components of the financial system. This industry triggers the growth and development of the country. According to Bank Negara Malaysia (2022) [20], 16 Islamic Banks (Table 3) registered with local or foreign ownership in the country.

Table 3. List of Islamic Banks in Malaysia

| No. | Company Name | Ownership |
|---|---|---|
| 1 | Affin Islamic Bank Berhad | Local |
| 2 | Al Rajhi Banking and Inverstment and Corporation (Malaysia) Berhad | Foreign |
| 3 | Alliance Islamic Bank Berhad | Local |
| 4 | AmBank Islamic Berhad | Local |
| 5 | Bank Islam Malaysia Berhad | Local |
| 6 | Bank Muamalat Malaysia Berhad | Local |

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| | | |
|---|---|---|
| 7 | CIMB Islamic Bank Berhad | Local |
| 8 | Hong Leong Islamic Bank Berhad | Local |
| 9 | HSBC Amanah Malaysia Berhad | Foreign |
| 10 | Kuwait Finance House (Malaysia Berhad) | Foreign |
| 11 | Maybank Islamic Berhad | Local |
| 12 | MBSB Bank Berhad | Foreign |
| 13 | OCBC Al-Amin Bank Berhad | Foreign |
| 14 | Public Islamic Bank Berhad | Local |
| 15 | RHB Islamic Bank Berhad | Local |
| 16 | Standard Chartered Saadiq Berhad | Foreign |

Source: Bank Negara Malaysia (2022) [20]

Based on Table 1, only five full-fledged Islamic banks were considered and focused on this study. The list of five full-fledged Islamic banks in Malaysia is as follows:

1) Bank Islam Malaysia Berhad (BIMB),
2) Bank Muamalat Malaysia Berhad,
3) MBSB Bank Berhad,
4) Al Rajhi Banking and Inverstment and Corporation (Malaysia) Berhad, and
5) Kuwait Finance House (Malaysia Berhad)

In the previous literature, Ibrahim (2020) [21] explored the banking sector's performance relationship with the presence of Islamic banking in Malaysia's industry. The paper compared the performance of profitability, efficiency, and risk of Islamic banks to conventional banks and examined the Islamic banking projection effects on bank performance in Malaysia. A panel modelling approach was adopted, resulting that the penetration of Islamic banking was being associated with lesser profitability of the bank. He also mentioned that the expansion and growth of Islamic banking led to less risk and more efficiency in Malaysian operating banks.

Existing research on the competition between Islamic and conventional banks in Malaysia by Harkati et al. (2020) [22] revealed that the operation of the Malaysian banking industry during the study period (2011-2017) fell under the monopolistic type of business competition. The source of secondary data collection was from the database of FitchConnect for all operating banks in the industry, and panel data analysis techniques and the Wald test were performed to assure the validity and consistency of the findings. Concerning the market structure of monopoly competition, the authors explored that the competition among conventional banks in Malaysia is more intense than that among Islamic banks.

### 1.2.3 Islamic Banking and Economic Growth

The first research on Islamic banking and economic growth was by Wohlers-Scharf (1983) [23]. He found that Islamic banking significantly contributes to economic growth when a recession arises. It is because the nature of Islamic banking business is interconnected with productive and real investments and obeys an interest-free system which is shock-reduced amidst a downturn.

Additionally, Furqani and Mulyany (2009) [24] used the co-integration test and the Vector Error Model (VECM) methodology and investigated the relationship between Islamic banking and economic growth in Malaysia. The results show that the variables; of Islamic banking with Malaysia's economic growth and capital accumulation have a positive correlation in the long run, indicating that an increasing fixed investment proves that Islamic banking stimulates the growth of the real sectors. The same research mentioned that in Malaysia, the Islamic banking industry had changed with a positive direction in the economy's financial performance. They addressed that all banks could adopt the regulations and guidelines presented by the Islamic banking system to regain their clients' trust, particularly in the aftermath of the global financial crises.

In addition, another study on Islamic banking and economic growth by Johnson (2013) [25] tested the determinants of Islamic banks on economic growth using 2SLS regression. The findings of this study stated that the prevalence population of Muslims is said to be the most significant factor for the diffusion of Islamic banks. However, there is an assumption on economic growth that could not be confirmed due to their Shariah law independent implementation. The study also mentioned that Shariah's implementation helps to promote, particularly in Muslim economies that seek to reduce the factors associated with low socioeconomic such as poverty, unemployment, and others.

Substantial evidence in the recent literature demonstrated that the development of the Islamic banking system did encourage MENA countries' economic growth [26]. Then, other evidence was found that although Islamic banking development could encourage economic growth, it was hampered by a less developed institutional framework. The results indicated that the government should impose authority and implement profitable and economic-driven institutional policies for the Islamic banking system.

While these previous studies provided evidence that Islamic banking influences economic growth from various aspects, the evidence remained scanty. Simply put, a more thorough and extensive evaluation of

the role of Islamic banking is required to suit the recent of socioeconomic scenario to fill the gap, which perfectly aligns with this study's objectives.

## 2. METHOD

This section details a discussion of data, variables, and methodology used to achieve the objective of this study.

### 2.1 Data

Variables in this study included Gross Domestic Product (GDP) as the dependent variable representing the economic growth, and measures for Islamic banking profitability performance, including return on assets (ROA), return on equity (ROE), and net profit margin (NPM), served as the independent variables. Annual data for all variables have been collected from 2016 to 2021. The data used for the analysis is extracted from the Department of Statistics Malaysia (DOSM) and content analysis from the financial statements covering five standalone Islamic banks in Malaysia from 2016 to 2021. These include all local and foreign standalone Islamic banks currently operating, following the Central Bank of Malaysia (BNM) [20]. The summary of variables, data sources, and formulas are stated in Tables 4 and 5, respectively.

Table 4. Variables and data sources

| Variable | Measures | Proxy | Data Source |
|---|---|---|---|
| | (i) | Dependent Variable | |
| Economic Growth | Gross Domestic Product | GDP | Department of Statistics Malaysia (DOSM) |
| | (ii) | Independent Variable | |
| Islamic banks profitability performance | Return on Assets | ROA | Islamic banks financial statements |
| | Return on Equity | ROE | |
| | Net Profit Margin | NPM | |

Table 5. Formula of variables

| Variables | Proxy | Measurement | Scale |
|---|---|---|---|
| Gross Domestic Product | GDP | GDP Growth rate | % |
| Return on Assets | ROA | ROA = Net Income ÷ Total Assets | Ratio |
| Return on Equity | ROE | ROE = Net Income ÷ Shareholder's Equity | Ratio |
| Net Profit Margin | NPM | NPM = Net Income ÷ Revenue | Ratio |

Software applications and statistical programs such as Microsoft Excel primarily assisted the process in covering the creation of tables and orderly arrangement of the panel data to process and obtain secondary data. All tests and regression analysis required to conduct this study then is processed using EViews Version 12.0. The panel data regression methodology necessarily needs to perform the following steps:

(i) Correlation Analysis,
(ii) Model Testing, and
(iii) Panel Regression Analysis

### 2.2 3.2 Correlation Analysis

Correlation analysis can be defined as a measure of an association or relationship between variables. The magnitude change of one variable is correlated with the magnitude change of another variable. It can be either in the opposite (negative correlation) or exact (positive correlation) direction. At most, the correlation term is often used to analyze a linear relationship between two continuous variables.

In addition to that, in this paper, a multicollinearity test needs to be performed. The value between variables should be less than 0.8 to be free from multicollinearity. Multicollinearity could lead to less reliable results if the variables are highly correlated. Table 6 depicts the correlation coefficient value with its interpretation for the analysis.

Table 6. Correlation value

| Correlation Coefficient | Interpretation |
|---|---|

| | |
|---|---|
| 0.00 | No relationship |
| 0.01 – 0.19 | Very weak |
| 0.20 – 0.39 | Weak |
| 0.40 – 0.59 | Average |
| 0.60 – 0.79 | Strong |
| 0.80 -0.99 | Very Strong |
| 1.00 | Perfect relationship |

Source: Adapted from Schober et al. (2018) [27]

### 3.3 Model Testing

Next is model testing, which determines the best and most appropriate model for panel regression analysis. Three-panel regression models are:

(i) Ordinary Least Square (OLS) or Common Constant Effects,

(ii) Fixed Effects, and

(iii) Random Effects

A more detailed explanation of the regression model is mentioned in section 3.4. However, OLS is omitted in this research because it assumes the same coefficients for all observations, which may result in heterogeneity bias. This paper includes only fixed or random effects as the estimation method.

The statistics of Hausman [28] must be conducted to distinguish between estimation techniques, fixed effects, and random effects. The specification Hausman test is a statistical test that can be performed to solve many specification problems in econometrics. The most known application is the one test of specification of the individual effects in a panel, discriminating between the fixed and random effects.

The Hausman test was conducted to assist in choosing between the mentioned approaches with the following hypothesis:

$$H_0: Random\ Effects\ model\ is\ consistent$$
$$H_1: Fixed\ Effects\ model\ is\ consistent$$

According to the Panel Data Regression Models topic in the Basic Econometrics book by Gujarati and Porter (2003) [28], the null hypothesis must be rejected if the p-value is less than 0.05. Thus, the hypothesis that the random effects model is consistent is rejected, resulting in using a fixed effects estimator. In contrast, a more significant p-value of larger than 0.05 implies that it fails to reject the null hypothesis. Hence, the random effects estimator is more appropriate for the panel data regression analysis.

### 3.4 Panel Regression Analysis

Following model testing, the next step is to review the results of the panel data regression of the most appropriate model, whether that is fixed effects or random effects. Panel data regression analysis is a method for estimating combined datasets consisting of time series and cross-sectional data. All cross-sectional unit is arranged and surveyed over time, allowing data to be pooled over space and time (Gujarati & Porter, 2003) [28].

In line with the aim of this research, panel data is more applicable compared to cross-sectional data. The key to using the panel is the amount of observation in a panel dataset because of its multidimensional characteristic, allowing it to include many observations for various entities. Hence, it is efficiently suitable for this study as it aims to examine the country's economic growth with the Islamic banking profitability performance variables, which comprises five full-fledged Islamic banks in Malaysia within six years of study periods.

The empirical model used in this study takes the following form (1).

$$GDP = f(ROA, ROE, NPM) \quad (1)$$

Equation (1) can be expressed in a general panel equation as follows (2).

$$GDP_{it} = \beta X_{it} + u_{it} \quad (2)$$

From equation (2), $X_{it}$ refers the variables used in the model and is given as (3).

$$GDP_{it} = a + \beta_1 ROA_{it} + \beta_2 ROE_{it} + \beta_3 NPM_{it} + u_{it} \quad (3)$$

with,
GDP: Gross Domestic Product
ROA: Return on Assets
ROE: Return on Equity
$a$: Constant term
$\beta_1, \beta_2, \beta_3$: Coefficients of the corresponding independent variable
U: Error term

where $i = 1, 2, \ldots, 5;\ t = 2016, 2017, \ldots, 2021$

As mentioned in the previous section, only two estimators are being discovered in this study: Fixed Effects and Random Effects Models. The fixed effects model allows each group to have its intercept better, indicating a better way to model the data as given in (4). The simplest way is to create a set of dummy variables, one for each group, and include them as regressors.

$$GDP_{it} = a_i + \beta X_{it} + u_{it} \quad (4)$$

Meanwhile, the assumption of the previous model that each group has a non-stochastic group-specific component to y differs from the random effects model, which assumes that these unobservable effects may be stochastic. Hence, the way of controlling them is by including dummy variables in the model. It attempts to deal with equation (5).

$$GDP_{it} = \alpha + \beta X_{it} + v_{it} + u_{it} \quad (5)$$

## 3. RESULTS AND DISCUSSIONS

In this section, results and discussion are analysed. They are being interpreted in detail for the required test and analysis performed to satisfy the objectives of this paper.

### 3.1 Correlation Analysis

The correlation values for all the variables used in this study, dependent and independent, are as indicated in a correlation matrix in Table 7. The correlation analysis aims to identify the high correlation values above 0.8 between the variables. Multicollinearity is said to have occurred if there is a high correlation value above 0.8, and it should be avoided.

Table 7. Correlation matrix of variables

| | *GDP* | *ROA* | *ROE* | *NPM* |
|---|---|---|---|---|
| *GDP* | 1.000000 | | | |
| *ROA* | 0.194432 | 1.000000 | | |
| *ROE* | 0.107015 | 0.754600 | 1.000000 | |
| *NPM* | 0.103567 | 0.133110 | 0.294573 | 1.000000 |

The correlation matrix shows that all variables of which return on assets (ROA), return on equity (ROE) and net profit margin (NPM) are positively correlated with the gross domestic product (GDP). Moreover, all variables have a correlation value below 0.8. All variables are independent of multicollinearity; thus, the research can be proceeded accordingly.

### 3.2 Model Testing

Figure 6 depicts the result of the Hausman test conducted to identify the most appropriate method comparing fixed effects and random effects estimators. It revealed that the chi-square statistic is 4.079869, which is smaller than the critical value. Hence, we accepted the null hypothesis of random effects and rejected the fixed effects estimator (alternate hypothesis).

Correlated Random Effects - Hausman Test
Pool: BASIC
Test cross-section random effects

| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|---|---|---|---|
| Cross-section random | 4.079869 | 3 | 0.2530 |

** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

| Variable | Fixed | Random | Var(Diff.) | Prob. |
|---|---|---|---|---|
| ROA | 0.633510 | 2.223882 | 6.083062 | 0.5190 |
| ROE | 0.105657 | -0.059658 | 0.145871 | 0.6651 |
| NPM | 0.000000 | 0.000000 | 0.000000 | 0.0917 |

Figure 6. Hausman test results

In addition, the results are supported by the p-value of 0.2530, which is more than 0.05. Therefore, the null hypothesis is accepted, of which the random effects model is consistent, resulting in the ineffectiveness of fixed effects for the panel regression analysis.

**3.3 Panel regression analysis**

After conducting the Hausman test, panel regression analysis proceeded with the best estimator, the random effects model. Figure 7 comprises the random effects estimation results, including the Islamic bank performances of return on assets (ROA), return on equity (ROE) and net profit margin (NPM) on economic growth in Malaysia.

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -1.177960 | 3.705852 | -0.317865 | 0.7531 |
| ROA | 2.223882 | 2.281765 | 0.974633 | 0.3387 |
| ROE | -0.059658 | 0.129404 | -0.461023 | 0.6486 |
| NPM | 1.35E-13 | 2.54E-13 | 0.529929 | 0.6007 |

| Effects Specification | S.D. | Rho |
|---|---|---|
| Cross-section random | 0.000000 | 0.0000 |
| Idiosyncratic random | 4.047658 | 1.0000 |

| Weighted Statistics | | | |
|---|---|---|---|
| R-squared | 0.516764 | Mean dependent var | 2.838446 |
| Adjusted R-squared | 0.507455 | S.D. dependent var | 3.941660 |
| S.E. of regression | 4.053870 | Sum squared resid | 427.2804 |
| F-statistic | 0.472268 | Durbin-Watson stat | 2.002688 |
| Prob(F-statistic) | 0.704236 | | |

Figure 7. Panel regressiom results

The panel regression takes the following equation (5).

$$GDP = -1.177960 + 2.223882ROA - 0.0596582ROE + 1.35E-13NPM \quad (5)$$

From the panel regression result, the R-squared value of 0.516764 or 51.68% implies that the explanatory variables of return on assets, return on equity, and net profit margin of standalone Malaysian Islamic banks can be explained for about 51.68% variation in economic growth in Malaysia. In comparison, other factors influence the other 48.32%. The coefficient of determination (R^2) is significant in every research; however, it is limited to how much variation of the dependent variable is explained by the independent variable in the regression.

The results found that return on assets and net profit margin variables have positive and significant effects on economic growth in Malaysia. Following a 1% increase in economic growth, return on assets is likely to increase by 2.22% and the same for net profit margin, in which the variable will increase by 1.35E-13%. This positive signal illustrates that these two variables strongly influence economic growth in Malaysia. The findings of this study are consistent with the previous literature by Ledhem & Mekidiche (2020) [13] and Rabaa & Younes (2016) [29], which revealed that the financial performance of Islamic banks has a positive influence on economic growth.

In addition, the remaining variable, referring to return on equity, yields a significant negative association with Malaysia's economic growth. This variable does not significantly influence, and there is a negative relationship with the response variable (GDP). This finding, however, opposed the results of the research by Rabaa and Younes (2016) [29], which includes the ROE variable that significantly has a positive relationship with economic growth.

## 4. CONCLUSION

A number of studies have been conducted by researchers or academicians regarding Islamic banking or finance, particularly for financial performance, which is determined by profitability. Similarly, this study measured Islamic banks' profitability performance variables and implemented a panel data approach to analyze more efficiently. This paper provides empirical evidence of the five full-fledged Islamic banks' profitability performance on economic growth in Malaysia within six years of data from 2016 to 2021. No multicollinearity occurred, for this paper eliminated no variables following the correlation analysis. Accordingly, the Hausman test is performed, resulting in random effects model.

After all, this study discovered a positive and significant relationship between the return on assets and the net profit margin of full-fledged Islamic banks with economic growth in Malaysia. In contrast, return on equity has a negative relationship with economic growth in Malaysia. It shows that economic growth has positively influenced by return on assets and net profit margin while negative by return on equity.

Therefore, Islamic banking has an impact on the economy. As a corollary, the Malaysian government must first inspire and encourage establishing more Islamic commercial banks and windows. At the same time, it will be an excellent move to have the existing Islamic banks establish more branches in Malaysia. Consequently, it will attract more people to go for Islamic banks than their conventional peers because the former has it all.

However, future research should include more variables of Islamic financing products, loans and others as well as extending the study period to investigate Malaysia's economic growth determinants further. This paper has limitations on the collection and interpretation of the data, nonetheless. This study did not measure country differences from other countries. Hence, the sample size was restricted to only full-fledged Islamic banks and their profitability performances on economic growth indicators. The confidence in the results could also be strengthened by access to country data on important variables, for example, demographic factors, market capitalization, and other related variables.

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