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**DETERMINANTS OF MALAYSIAN ISLAMIC BANK
DEPOSITS PERFORMANCE**

SAZANA BINTI AB RAHMAN



**DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
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DETERMINANTS OF MALAYSIAN ISLAMIC BANK DEPOSITS PERFORMANCE

**By
SAZANA BINTI AB RAHMAN**



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Philosophy**



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ISLAMIC BUSINESS SCHOOL
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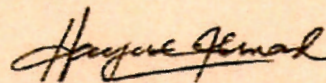
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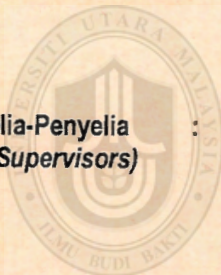
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ABSTRACT

The lower-than-targeted growth rate in Malaysia's Islamic banking sector is raising concerns. Islamic banking assets account for only 36.3% of total banking assets, missing the Malaysian government's 2022 target of 40%. Furthermore, Islamic deposits and investment accounts comprised only 41.6% of total bank deposits and savings. The issue is further exacerbated by rapid fluctuations in the growth rate of Islamic bank deposits. Despite these challenges, factors affecting Islamic bank deposits have not been comprehensively studied. Therefore, this research aims to examine the effect of bank-specific factors, macroeconomic factors, and regulatory factors on the performance of Islamic bank deposits. Additionally, business enterprise depositors are measured as a moderating variable in this study. This study employs quantitative approach using secondary data from 16 Islamic banks between 2000 and 2021. The data were collected from Islamic banks' annual reports, Bank Negara Malaysia, World Bank, Department of Statistics Malaysia, and other specified sources. The data were analyzed using panel data regressions. The results indicate that performance of Islamic bank deposits is significantly impacted by bank-specific factors (net profit margin, bank concentration, financing-to-deposit ratio, and bank size) and macroeconomic factors (gross domestic product and inflation). Additionally, the moderating variable of business enterprise depositors only strengthens the relationship between the net profit margin and the performance of Islamic bank deposits. Overall, the findings suggest that bank-specific factors have a more substantial impact on the performance of Islamic bank deposits than macroeconomic and regulatory factors. Therefore, Islamic banks should prioritize bank-specific factors determinants to ensure stability. The efforts shall be performed while also taking macroeconomic factors into meticulous consideration.

Keywords: Performance, Islamic Bank Deposit, bank-specific factors, macroeconomic factors, Malaysia.

ABSTRAK

Kadar pertumbuhan sektor perbankan Islam di Malaysia yang lebih rendah daripada sasaran menimbulkan kebimbangan. Aset perbankan Islam hanya menyumbang 36.3% daripada jumlah keseluruhan aset perbankan, tidak mencapai sasaran 40% yang ditetapkan oleh kerajaan Malaysia pada tahun 2022. Selain itu, deposit dan akaun pelaburan Islam hanya terdiri daripada 41.6% daripada jumlah deposit dan simpanan bank. Isu ini menjadi lebih teruk akibat turun naik kadar pertumbuhan deposit bank Islam. Walaupun terdapat cabaran-cabaran ini, faktor-faktor yang mempengaruhi prestasi deposit bank Islam belum dikaji secara menyeluruh. Oleh demikian, kajian ini bertujuan untuk menilai kesan faktor-faktor khusus bank, faktor-faktor makroekonomi, dan faktor-faktor pengawalseliaan terhadap prestasi deposit bank Islam. Selain itu, pendeposit perusahaan perniagaan diukur sebagai pembolehubah penyederhana dalam kajian ini. Kajian ini menggunakan pendekatan kuantitatif dengan menggunakan data sekunder dari 16 bank Islam antara tahun 2000 dan 2021. Data dikumpulkan dari laporan tahunan bank Islam, Bank Negara Malaysia, Bank Dunia, Jabatan Perangkaan Malaysia, dan sumber-sumber lain yang ditetapkan. Data dianalisis menggunakan regresi data panel. Hasil kajian menunjukkan bahawa prestasi deposit bank Islam dipengaruhi dengan ketara oleh faktor-faktor khusus bank (margin keuntungan bersih, kepekatan bank, nisbah pembiayaan kepada deposit, dan saiz bank) dan faktor-faktor makroekonomi (produk domestik kasar dan inflasi). Selain itu, pembolehubah penyederhana pendeposit perusahaan perniagaan hanya memperkuat hubungan antara margin keuntungan bersih dan prestasi deposit bank Islam. Secara keseluruhan, dapatan kajian mencadangkan bahawa faktor-faktor khusus bank mempunyai kesan yang lebih besar terhadap prestasi deposit bank Islam berbanding faktor-faktor makroekonomi dan pengawalseliaan. Oleh itu, bank-bank Islam harus memberi keutamaan kepada faktor-faktor khusus bank untuk memastikan kestabilan. Usaha ini perlu dilakukan sambil mempertimbangkan faktor-faktor makroekonomi dengan teliti.

Kata kunci: Prestasi, Deposit bank Islam, faktor khusus bank, faktor makroekonomi, Malaysia.

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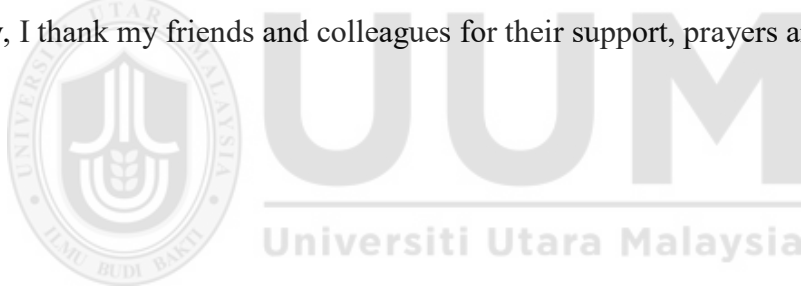


TABLE OF CONTENTS

Permission to Use	ii
Acknowledgement	v
Table of Contents	vi
List of Tables	x
List of Figures.....	xi
CHAPTER ONE INTRODUCTION	1
1.0 Background of the Study	1
<i>1.0.1 Islamic Banking in Malaysia</i>	2
<i>1.0.2 Bank Deposit Performance</i>	4
<i>1.0.3 Justification of the Study</i>	7
<i>1.0.4 Current Issues in Islamic Bank Deposits</i>	12
1.1 Problem Statement.....	25
<i>1.1.1 Unstable composition of deposits as funding sources</i>	25
<i>1.1.2 Declining pattern in the Islamic bank deposit's performance</i>	27
<i>1.1.3 Limited Studies</i>	32
1.2 Research Questions	36
1.3 Research Objectives	36
1.4 Significance of the Study	37
1.5 Scope of the Study	38
1.6 Definition of Key Terms	39
1.7 Organization of the Study	42
CHAPTER TWO LITERATURE REVIEW	45
2.0 Introduction	45
<i>2.0.1 Majority Muslim Population in Malaysia</i>	46
2.1 Role and Importance of Bank Deposits.....	47
2.2 Islamic Bank Deposits -Dependent Variable	49
2.3 Islamic bank-specific financial factors - Independent Variables.....	52

2.3.1 Profitability.....	52
2.3.2 Liquidity.....	63
2.4 Macroeconomic Factors - Independent Variables	83
2.4.1 Gross Domestic Product.....	83
2.4.2 Inflation	87
2.4.3 Unemployment.....	90
2.4.4 Overnight Policy Rate	94
2.5 Regulatory Requirements -Independent Variable.....	99
2.5.1 Section 2(1), Islamic Financial Services Act 2013 (IFSA 2013)	102
2.6 Customer Type – Business Enterprise Depositors	104
2.6.1 Business Enterprise Depositors as The Moderating Variable.....	108
2.7 Related Theories.....	112
2.7.1 Financial Intermediation Theory	112
2.7.2 Liquidity Creation Theory.....	117
2.7.3 Conclusion.....	121
2.8. Maqasid Shariah Concept	125
2.8.1 Shariah Governance	128
2.8.2 Islamic Banking: Principles and Practices	134
2.8.3 Islamic Banking: The “Formative” Theory.....	136
2.9 Conceptual Framework.....	138
2.10 Chapter Summary.....	139
CHAPTER THREE METHODOLOGY	141
3.0 Introduction	141
3.1 Research Approach and Research Design	141
3.2 Research Framework.....	144
3.3 Empirical Model Specification.....	146
3.3.1 Estimating the Bank-Specific Financial Determinants of Islamic Bank Deposits	147
3.3.2 Estimating the Macroeconomics and Regulatory Determinants of Islamic Bank Deposits	148

3.3.3 <i>Estimating the Business Enterprises Depositors as Moderating Variable Between Independent Variable and Dependent Variable of Islamic Bank Deposits</i>	149
3.4 Operational Definition and Measurement	151
3.5 Population and Sampling	154
3.6 Data Collection Procedures	155
3.7 Data Analysis Techniques	156
3.7.1 <i>Descriptive Analysis</i>	157
3.7.2 <i>Diagnostic Test</i>	157
3.7.3 <i>Panel Data Analysis</i>	158
3.8 Chapter Summary	159
CHAPTER FOUR FINDINGS AND DISCUSSIONS	160
4.0 Introduction	160
4.1 Estimating the Bank-Specific Financial Determinants of Islamic Bank Deposits	161
4.1.1 <i>Descriptive Statistics</i>	163
4.1.2 <i>Skewness and Kurtosis Statistics</i>	165
4.1.3 <i>Pearson Correlation Matrix Test</i>	166
4.1.4 <i>Panel Data Regressions with Fixed Effects Model: Measuring the Bank- Specific Financial Determinants of Islamic Bank Deposits</i>	168
4.2 Estimating the Macroeconomics and Regulatory Determinants of Islamic Bank Deposits	180
4.2.1 <i>Descriptive Statistics</i>	181
4.2.2 <i>Skewness and Kurtosis Statistics</i>	183
4.2.3 <i>Pearson Correlation Matrix Test</i>	183
4.2.4 <i>Panel Data Regressions with Fixed Effects Model: Measuring the Macroeconomic and Regulatory Determinants of Islamic Bank Deposits</i>	184
4.3 Estimating the Business Enterprises Depositors as Moderating Variable Between Independent Variable and Dependent Variable of Islamic Bank Deposits	194

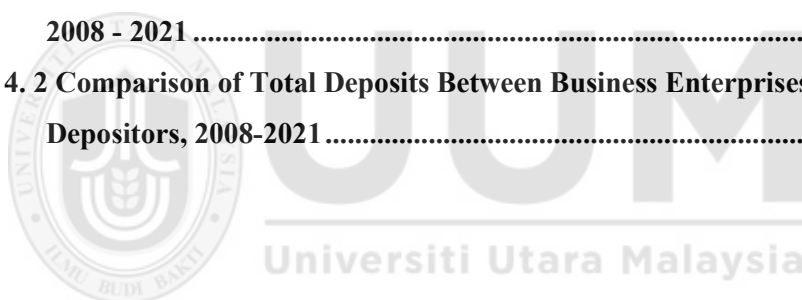
4.3.1 Moderating Role of Business Enterprises Depositors	195
4.3.2 Stepwise In Multicollinearity Diagnostic Test	198
4.3.3 Descriptive Statistics.....	201
4.3.4 Pearson Correlation Matrix Test.....	203
4.3.5 Panel Data Regressions with Random Effects Model: Measuring the Business Enterprises Depositors as Moderating Variable Between Independent Variable with Islamic Bank Deposits	204
4.4 Conclusion.....	209
CHAPTER FIVE CONCLUSION	213
5.0 Introduction.....	213
5.1 Summary of findings on Research Objectives.....	214
5.2 Critical reflections on the Research Findings and Theoretical Considerations.....	216
5.2.1 Profitability Factors.....	216
5.2.2 Liquidity Factors.....	218
5.2.3 Macroeconomic and Regulatory Factors	221
5.2.4 Moderating Effects of Business Enterprises Depositors	222
5.3 Implications and Recommendations for Islamic Banks and Policy Makers	223
5.3.1 Profitability Factors.....	223
5.3.2 Liquidity Factors.....	224
5.3.3 Macroeconomic and Regulatory Factors	226
5.3.4 Moderating Effects of Business Enterprises Depositors	229
5.4 Implications and Recommendations for Academic and Researchers	229
5.4.1 Profitability Factors.....	229
5.4.2 Liquidity Factors.....	230
5.4.3 Macroeconomic and Regulatory Factors	231
5.4.4 Moderating Effects of Business Enterprises Depositors	233
5.5 Limitations and Future Research	233
REFERENCES.....	236

LIST OF TABLES

Table 1. 1 Market Structure of Islamic bank deposits in Malaysia based on Top Four Firm Concentration Ratio (2012 – 2021)	9
Table 1. 2 Definition of Key Terms	39
Table 3. 1 Operational Definition, and Measurement of Variables	151
Table 3. 2 The Sources of Data Collection for Each Variable	155
Table 4. 1 Descriptive statistics.....	163
Table 4. 2 Skewness and Kurtosis Statistics	166
Table 4. 3 Pearson Correlation Matrix Test.....	166
Table 4. 4 Panel Data Regressions with Fixed Effects Model: Measuring the Bank-Specific Financial Determinants of Islamic Bank Deposits.....	168
Table 4. 5 Sensitivity Test for Examining the Robustness of the Fixed Effects Model	174
Table 4. 6 Additional Panel Data Regressions with Firm Effects	176
Table 4. 7 Descriptive Statistics	181
Table 4. 8 Normality test	183
Table 4. 9 Pearson Correlation Matrix Test.....	183
Table 4. 10 Panel Data Regressions with Fixed Effects Model: Measuring the Macroeconomics Determinants of Islamic Deposits.....	184
Table 4. 11 Sensitivity Test for Examining the Robustness of the Fixed Effects Model	189
Table 4. 12 Additional Panel Data Regressions with Firm Effects	192
Table 4. 13 Pearson Correlation Matrix Test.....	197
Table 4. 14 Stepwise in Variance Inflation Factor (VIF) Test	198
Table 4. 15 Descriptive Statistics	202
Table 4. 16 Pearson Correlation Matrix Test.....	203
Table 4. 17 Panel Data Regressions with Random Effect Model: Measuring the Business Enterprises Depositors as Moderating Variable Between Net Profit Margin and Islamic Bank Deposits.....	204
Table 4. 18 Sensitivity Test for Examining the Robustness of the Random Effects Model.....	206
Table 4. 19 Additional Panel Data Regressions with Firm Effects	207

LIST OF FIGURES

Figure 1. 1 Growth of Deposits in Banking System, 2008 – 2020	10
Figure 1. 2 Growth of Deposits in Islamic Banking System, 2008 – 2020	11
Figure 1. 3 Composition of Deposits for Funding Sources in Banking and Financial Institutions of Malaysia, 2012 – 2021.	25
Figure 1. 4 Total Deposit by Type in Banking System, 2007 – 2020.....	28
Figure 1. 5 Total Deposit by Type in Islamic Banking System, 2007 – 2020	29
Figure 2. 1 Conceptual Framework	138
Figure 3. 1 Research Approach Framework	142
Figure 3. 2 Research Framework I for Islamic Banks Deposit Performance.....	145
Figure 3. 3 Research Framework II for Islamic Banks Deposit Performance	146
Figure 4. 1 Total Deposits from Business Enterprises and Individual Depositors, 2008 - 2021	195
Figure 4. 2 Comparison of Total Deposits Between Business Enterprises and Individual Depositors, 2008-2021	196



CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

Islam has known the foundation of Islamic finance as a banking institution is based on the Islamic teachings from the verses of the holy Al-Quran. From the Islamic concepts, Muslims manage the form and mechanism of the institution (Baehaqie et al., 2017). The essential Islamic concepts are notably responsibility (The Qur'an, 2:282-283), trustworthiness (The Qur'an, 6:70), fairness (The Qur'an, 3:4), and the interest (*riba*) (The Qur'an, 2:275, 278-279). Muslims have practiced the Islamic banking foundations since the era of prophet Muhamad S.A.W. The Makkah community, for example, trusted prophet Muhammad S.A.W with their safekeeping (*wadi'ah*), and profit and loss sharing (*mudharabah*) (Baehaqie et al., 2017). The distinction of Islamic banking stems from the obligation to practice Islamic concepts and comply with Shariah requirements in all banking operations. The Shariah compliance includes any transactions that must not deal with the forbidden elements according to Islamic law, such as interest (*riba*), uncertainty (*gharar*), games of chance (*maysir*), and prohibited (non-halal) things.

Since the aftermath of global financial crisis during 2007-2008, Islamic banking has extended substantially around the globe (Meslier et al., 2017a). It is captivating to see the remarkable growth of Islamic financial institutions over the past two decades (Sulub & Mohd Salleh, 2019). The Islamic Financial Services Board (IFSB, 2023, December 10) estimated the overall Islamic banking activity based on aggregated data from 26 countries was USD 1,696 billion for total assets and USD

1,449 billion for total liabilities at the end of Q4 2021. The leading market players of Islamic banking and finance are pioneered by Malaysia and Saudi Arabia. Islamic banking is also emerging tremendously around the globe such as in Gulf Cooperation Council (GCC), Asian, Africa, Europe, and the United States (IFSB, 2020).

Bank Negara Malaysia (BNM) has successfully introduced and implemented a dual character of banking system in Malaysia. Besides the conventional banking, Islamic banking in Malaysia is proven at a remarkable performance as it has been institutionalized horizontally and vertically into social, economic, and political institutions (Harkati et al., 2020a).

1.0.1 Islamic Banking in Malaysia

In 2023, Malaysia is celebrating the 40th anniversary of the implementation of the Islamic Banking Act (IBA) in 1983. This act led to the creation of Bank Islam Malaysia Berhad, which became the country's leading Islamic bank in June of the same year. The Islamic Banking Act (IBA) has been replaced by the Islamic Financial Services Act (IFSA) 2013 and its subsequent amendments, together with the Shariah Governance Policy Document (SGPD) 2019. Over the past forty years, the Malaysian Islamic finance business has experienced significant growth and success, establishing government norms for the Islamic finance sector that have yet to be matched by any other country. Bank Negara Malaysia released its Annual Report for the Fiscal Year 2022 in March 2023, and reported that the Islamic banking sector has demonstrated impressive resilience despite global uncertainties, geopolitical challenges, and economic shocks. These macroeconomic factors have led to a widespread cost-of-

living crisis, driven by increasing fuel and food prices and exacerbated by high levels of inflation locally and globally.

Currently, there are 16 Islamic banks besides 26 conventional banks that operate effectively and efficiently in Malaysia. 16 Islamic banks in Malaysia comprise of five foreign banks and 11 local banks, with a total workforce at the number of 11,835 employees (IFSB, Q4 2022). The IFSB also reported that the total assets, or total liabilities and equities of Malaysia's overall Islamic banking financial activity was RM 1,049,355 million at the end of Q1 2023.

Islamic banking study has grown in popularity during the last two decades. How Islamic banks perform their trustworthiness and stability functions, especially in competitive dual markets, remains an insufficiently reported issue (Sulub & Mohd Salleh, 2019). The rising concern is the lower growth rate of Islamic banking compared to the targeted growth level. The aspirations of the Malaysian government are to make Malaysia as the center in Islamic banking and finance in the world. By 2020, the government targets Islamic banking assets to account for 40% comparing to the overall banking assets. This target, however, has yet to be met since the proportion has only reached 31% in 2018, equating to RM916,700 million (Bank Negara Malaysia, 2020). As of the end of 2020, it only reached 30%. This is a slight increase from 29.5% in 2019. In terms of deposit-taking, Islamic banking deposit constitutes only 31% of total deposit of banking system in the year of 2020.

Until 2022, Malaysia's Islamic banking sector has not yet at the same par but steadily progressing towards achieving parity market share with the conventional

banking system. This benchmarking includes the market share of the banking system's financing, deposits, and investment accounts. The government has set an aim to achieve a 50% parity by 2025 for the country's dual banking system policy (Association of Shariah Advisors in Islamic Finance, 2023, June 9). This policy involves the operation of both an Islamic banking system and a conventional banking system, which operates alongside but do not co-mingling their funds and assets. Malaysia's Islamic banking sector has demonstrated remarkable progress on an annual basis and is on the verge of achieving parity. The 2022 Bank Negara Malaysia Annual Report, published in March 2023, reveals that the total assets managed by Malaysia's Islamic banking system rose from RM1,236,289.1 million in 2021 to RM1,316,167.8 million in 2022. This represents approximately 36.3% of the overall assets held by the entire banking sector. The market share of Islamic deposits and investment accounts accounted for 41.6% of total banking deposits and savings. This represents a year-on-year growth of 9.3% (compared to 1.2% for the conventional sector), with Islamic deposits increasing from RM844.3 billion in 2021 to RM124.6 billion in 2022.

Therefore, for Islamic banking to continue to reach the parity target and commendable growth rate, Islamic banks need to focus on increasing their assets. One of the strategic ways to do this is by growing deposits since banks utilize deposits to increase their assets in terms of financing and other investments (Boadi et al., 2015)

1.0.2 Bank Deposit Performance

Deposits are necessary for depositors who wish to place their savings in the secure channel of the bank, which they do not expect to use immediately, and at the

same time, wish to earn some income from their safe funds. Banks, on the other hand, serve as a profit-making platform to channel funds to customers who are in need (Boadi et al., 2015). As the most reliable source of funds, deposits assist banks in boosting the country's economy through the funding activities (Eriemo, 2014). Deposit from banks' customers is a prominent element of a country's savings and is vital to the banking sector's performance (Mushtaq & Siddiqui, 2017). Hence, banks must first understand how to fully utilize funds effectively, based on bank deposits' performance (Eriemo, 2014).

According to Abdulazeez et. al. (2018), the higher the demand deposits, the higher is the efficiency level of banks. Abdulazeez et. al. (2018) also indicates the ratio of demand deposits to total deposits is positively associated with bank performance. Since banks must provide return to depositors, the cost to the bank increases as depositors deposit more money. However, with more deposit accounts, banks are able to generate more revenue by providing more funding for borrowers. As a result, deposit growth boosts a bank's profitability, but only if the bank's management converts deposit liabilities into earning assets (Lutf & Omarkhil, 2018).

A higher amount of deposits can boost performance because deposits provide more reliable funding and are less expensive than borrowed funds. Still, on the other hand, managing such deposits requires specific team management, resulting in significant costs too (Ranabhat, 2019). Therefore, a study on deposits' performance would surely be instrumental in determining the current situation, as deposits are regarded as the most important metric for determining a bank's total performance (T.

Khan, 2018). Bank deposit performance varies depending on their ability to mobilize various types of deposits, deposit growth over time, and deposit collecting from the public and private sectors (Khan, 2018). Nevertheless, this study employed the total collection of Islamic deposits as a proxy for assessing the performance of Islamic bank deposits.

Through the process of deposit performance, banks can generate incentive funds from deposits for lending. However, banks face difficulties obtaining deposits during a financial crisis since the businesses and public experience reduced income and even financial losses. When the integrity of the banking system threatens the public's confidence, such that the public continues to keep money from banks, this further reduces the supply of deposit funds, leading to liquidity problems and credit crunch (Dia, 2013). When a recession or a crisis hits the banking system, any rise in risk aversion is balanced by significant deposit inflows that will lower the interest rates (Dia, 2013).

There are a lot of intriguing things to study when it comes to bank deposits. The most crucial and measurable considerations are the performance of the bank deposits, whether it supplies and generates more funds; or reduce and quench. Since banks involve deposit-taking, it is susceptible to economic scrutiny as well as highly regulated. Eriemo (2014) even said that deposits in banks have specific attributes that include liquidity, profitability, and reliability. Banks must ensure the deposits they receive are well mobilized to generate profit to instill public trust and confidence.

Especially for Islamic banks, which have a greater responsibility to maintain public trust which is in line with the Maqasid Shariah.

The current economic situation struck by the Covid-19 pandemic started in 2019-2020 globally has resulted in massive destruction and economic slowdown. The banking sector faces immediate pressures on capital and liquidity due to the economic downturn, and the length of this Covid-19 pandemic remains uncertain. Therefore, it becomes a big challenge for banks to attract new depositors and retain existing depositors in order to ensure deposit growth for sustainability. Despite the fact that deposits are crucial to investors and banks alike, hardly many relevant studies especially in Islamic banking have produced empirical results in this particular area. Similarly, in Malaysia, research is scarce on Islamic deposit performance. It is important to note that the bank's deposit performance is strongly linked to its activity in creating liquidity. Therefore, it is equally essential and strongly recommended to conduct research on the factors that influence bank deposit performance. Nevertheless, this study focuses only on the prevalence of Islamic banking in Malaysia.

The subsequent sections provide a rationale for the importance of conducting a study on the performance of bank deposits from the standpoint of Islamic banking in Malaysia.

1.0.3 Justification of the Study

Based on the arguments above, there is a strong need to study bank deposit performance of Islamic banks. To excel in the industry, Islamic banks need to be liquid

and strong in deposit generation. This forms a premise for the justification of this study. In specific, the justifications can be narrowed down to two points.

1.3.1 Market Structure of Islamic Deposits in Malaysia

1.3.2 Fluctuation growth of deposits generation in Malaysia

1.0.3.1 Market Structure of Islamic Deposits in Malaysia

The market structure of Islamic deposits in Malaysia, as depicted in Table 1.1, is analyzed using the Top Four Firm Concentration Ratio. The concentration ratio analysis has demonstrated that the market structure of Islamic bank deposits in Malaysia was monopolistic from 2012 to 2015 but transitioned to an oligopolistic structure from 2016 to 2021. From 2012 until 2021, Maybank Islamic Berhad has consistently held the top position in the market structure, followed by CIMB Islamic Berhad has consistently held the second position.. RHB Islamic Berhad, Public Bank Berhad, and Bank Islam Malaysia Berhad have consistently held the third and fourth positions, respectively, during the past decade. Due to the presence of the Top Four banks controlling the Malaysian Islamic bank deposits market share, other smaller banks faced difficulties to compete with them for deposits.

Table 1. 1

Market Structure of Islamic bank deposits in Malaysia based on Top Four Firm Concentration Ratio (2012 – 2021)

Islamic Bank	2012 (%)	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	2020 (%)	2021 (%)
Bank Islam	11.5	11.8	11.5	11.4	11.5	10.0	9.2	8.7	8.1	8.6
CIMB Islamic	12.5	12.1	11.5	11.6	13.2	14.1	14.0	15.6	15.4	14.3
MAYBANK Islamic	25.1	26.2	27.9	27.6	26.6	28.2	27.2	29.4	26.3	26.8
Public Bank Islamic	8.4	9.0	8.6	10.2	10.6	10.8	9.9	3.3	9.9	9.9
RHB Islamic	6.1	6.6	6.8	7.8	7.3	8.2	8.4	9.9	9.7	10.7
Top Four Market Share	57.5	59.1	59.4	60.8	61.9	63.1	60.3	63.6	61.3	61.7

Note: Researcher's calculation based on raw data from Islamic banks' Financial Statement.

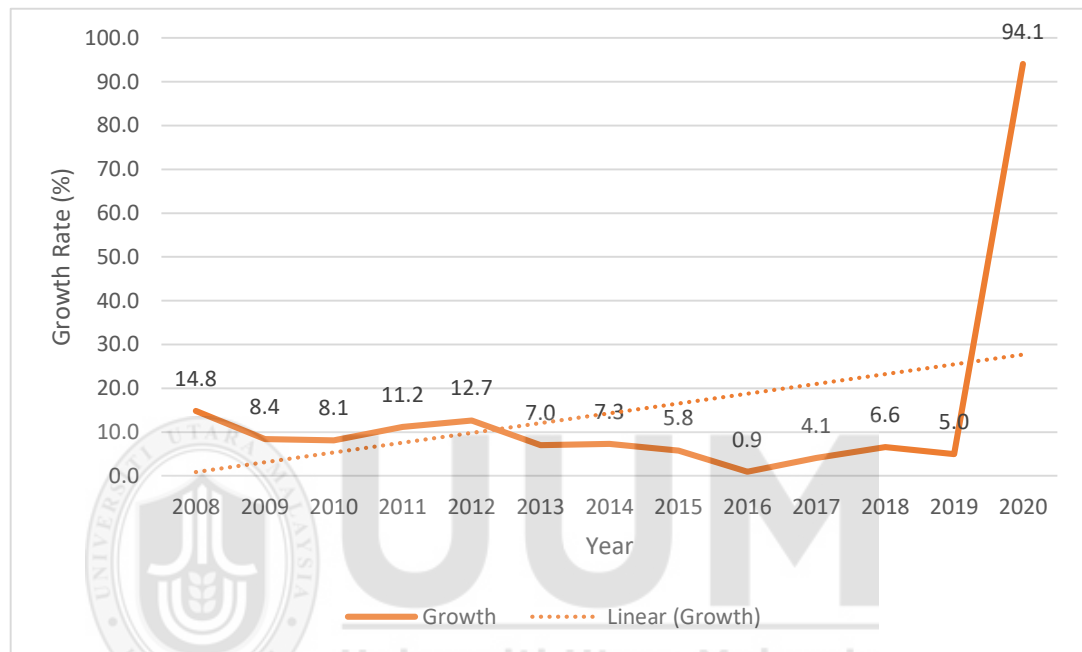
1.0.3.2 Fluctuation Growth of Deposits Generation in Malaysia

Another issue was the rapid fluctuation in the growth rate of bank deposits generation of Malaysian banking system as evidenced in Figure 1.1. The fluctuation in growth of deposits in Malaysian banking system is evident in Figure 1.1. A sturdy growth performance in the years of 2011, 2012, 2014, 2017, 2018 and especially in 2020 with tremendous performance of growth at 94.1% due to various stimulus measures introduced by the government to increase liquidity. However, the deposit which recorded 14.8% growth in 2008 decreased to 8.4% and 8.1% in 2009 and 2010 respectively. The deposit declined again in its growth from 12.7% in 2012 to 7.0% in 2013, as well as fell again from 5.8% in 2015 to the lowest growth of 0.9% in 2016. Another declining performance took place in 2018 to 2019 from 6.6% to 5.0%, respectively. The underlying reasons contributing to these fluctuations may be

attributed to internal and external factors such as the economic circumstances and the nation's political unrest.

Figure 1. 1

Growth of Deposits in Banking System, 2008 – 2020



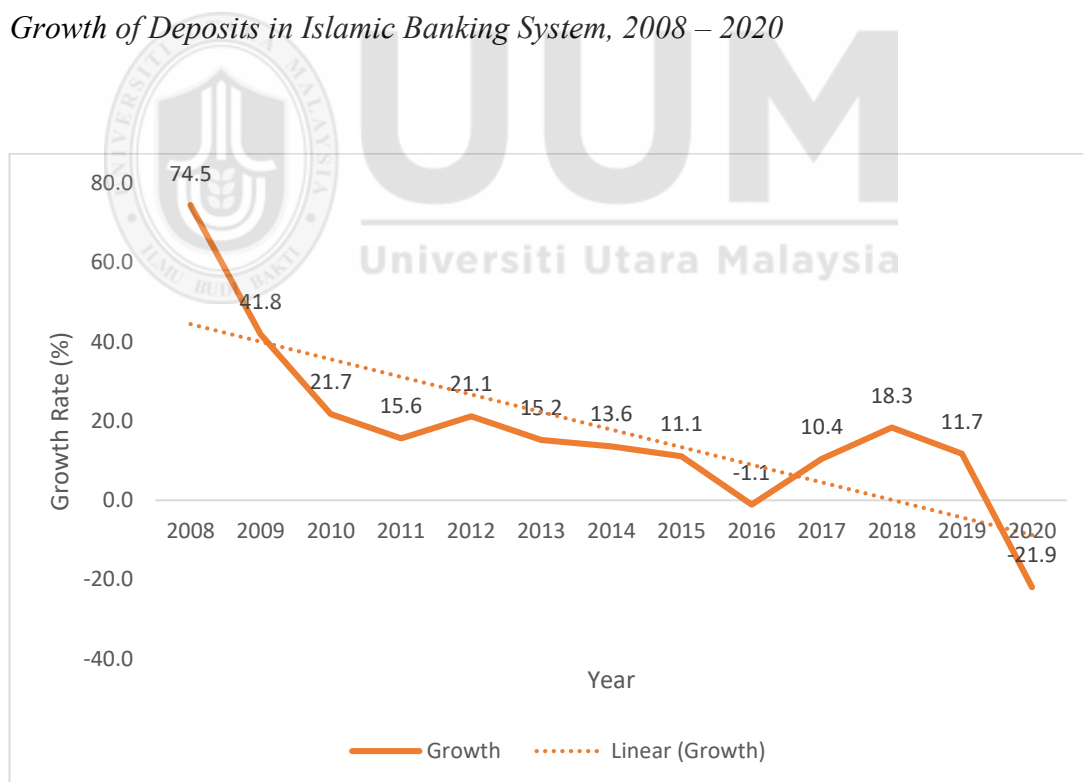
Note: Researcher's calculation based on raw data from Bank Negara Malaysia

However, there is a marked difference in deposit growth between the whole banking system and the Islamic banking system. For instance, in 2008 to 2009, deposits of Islamic bank decreased by 32.7% (74.5% - 41.8%), whereas the deposits growth for the banking system only experienced a decline by 6.4% (14.8% - 8.4%) during the corresponding period. The huge difference in deposit growth rate of 2008-2009 for Islamic banks majorly was affected by the underperforming deposits generation in certain Islamic banks for the year of 2009 particularly by Standard Chartered Saddiq, HSBC Amanah, and Kuwait Finance House. In fact, year of 2009

also shows slower deposits generation in other 13 Islamic banks. Moreover, Figure 1.2 shows a pattern of declining growth performances in Islamic bank deposits. The worst performance can be seen in the year 2020 with the result at -21.9%. The underlying reasons among others, is the growth of gross domestic product (GDP) recorded -5.6% in 2020 due to the pandemic. Historically, Malaysia has been impacted with commodity crisis during the 80s and financial crises during the 90s and 2008/2009 which required Government fiscal injection to mitigate the impact of financial risks to the economy.

Figure 1.2

Growth of Deposits in Islamic Banking System, 2008 – 2020



Note: Researcher's calculation based on raw data from Bank Negara Malaysia

The slowdown in growth and the contrasting performance of Islamic bank deposits in comparison to its counterparts indicate the existence of a contextual disparity that justify immediate attention for further investigation. Other major contributing factors, such as the increasing inflation and financial system tightening, are all substantial to deposits generation of Islamic bank.

The capacity of Islamic banks to sustain supply funding throughout the crisis-era depends crucially on the stability of their deposits. The two patterns in Figure 1.1 and Figure 1.2 show that the deposit growth was not stable. Hence, there is still an open empiric issue and unclear stand as to whether Islamic banking can sustain their credit supply in times of stress (Ibrahim & Rizvi, 2018) . The lack of studies to identify the factors influencing deposits performance, as mentioned earlier, have not been much-reported research. This provides empirical gaps pertaining to Islamic banks.

1.0.4 Current Issues in Islamic Bank Deposits

According to Bank Negara Malaysia (2022) Malaysia's market share of Islamic deposits and investment accounts is 41.6% in 2022. The Islamic Financial Services Board (IFSB, 2022) reported that nine countries under Islamic Financial Services Institution's jurisdictions experienced slower deposit growth. During the review period of Q4 2020 until Q4 2021, Malaysia's Islamic banking aggregate deposit annual growth was only 6%, positioned at 12th place among 14 countries reviewed (IFSB, 2022). Ab Rahman et. al. (2021) analyzed the deposits growth of Malaysia's banking system increased by 0.7% in 2020 (2019: -5.3%; 2018:4.4%), while the Islamic banking system decreased by -3.4% in 2020 (2019: -10.1%; 2018:3.5%).

Bani Ata (2019) claimed it is quite challenging for Malaysian Islamic banks to maintain sustainability as the country's highest bankruptcy rate was at 89%. Without the relevant safeguarding from the policy maker (i.e., government initiatives such as the six-month blanket financing repayment moratorium in 2020, compliance of Section 2 of Islamic Financial Services Act 2013, and Islamic deposits insurance scheme), Islamic deposits may lose their competitiveness as one of the significant liquidity creations in Islamic banks. Depositors may withdraw cash from Islamic banks and deposit them with conventional banks, causing liquidity shortages and slowing the growth of the Islamic banking industry (Bhuiyan et al., 2020).

Several main issues are highlighted in the following subsections concerning Islamic bank deposit performance. The issues are explained in terms of liquidity creation, Shariah concern, and financial intermediation.

1.0.4.1 Liquidity Creation Issue

Bordo and Landon-Lane (2010) characterize the banking crisis in the United States America (USA) in 1914 as a series of pre-banking waves of panic, which occurred due to the lender's absence or failure as a last resort. In addition, the authors provide a definition of a banking crisis that occurred during the USA 2008 financial crisis. This crisis involved the use of deposit insurance and was primarily caused by bank insolvency rather than a lack of liquidity. However, according to Freixas et. al. (2000), banks may have liquidity and solvency issues as a result of the banking crisis.

Diamond and Rajan (1999, 2000) modeled a partnership concept for banks' financial fragility where banks raise investors' funds to provide financing for

entrepreneurs. Through this partnership concept, a liquidity problem may arise when borrowers (i.e., entrepreneurs) refuse or withhold their repayment on demand. Banks can overcome this liquidity issue by taking on more deposits while reducing their capital structure. However, having a fragile capital structure and greater deposits are subject to "bank runs" because deposits are prone to be run by depositors, especially in the event of a bank's financial crisis (this situation is known as "financial fragility structure – crowding out deposits").

Gorton and Winton (2017) believed that a stronger capital structure could reduce liquidity creation since a higher capital ratio would lower the creation of liquidity in the bank. Besides, the bank's capital providers, such as investors, are not subject to "bank runs" like depositors. Nevertheless, a deposit contract mitigates the funding withholding by the borrower because, through depositors, the bank can maximize the creation of liquidity. Liquidity creation theory stipulates that creating bank deposits in a short-term maturity structure is more liquid than other assets, and provides customers with liquidity ease. Bank deposits are regarded as a fundamental element in the creation of liquidity (Mdaghri & Oubdi, 2022). The past literature on the theory of liquidity creation has focused primarily on conventional deposits rather than on Islamic deposits.

From the perspective of Islamic banking principles, the theoretical model of Islamic banks may effectively fill conventional banks' failure to sustain stability (Khan 1987). The foundation model of Islamic banks operates under the principles of Islamic law (Shariah), which forbids the payment or receipt of interest (riba) and promotes risk sharing. In Malaysia, the Islamic Financial Services Act 2013 (IFSA, 2013) redefines

Islamic deposits, and Islamic banks must separate the funds placed by the customers into Islamic deposit and investment accounts. The deposit account is risk-free since Shariah contracts guarantee the principal. In contrast, the investment account is vulnerable to loss because the principal return or profit is not guaranteed. Nevertheless, implementing IFSA 2013 may have unforeseen implications for depositors or investors, such as decreased profit payouts and "withdrawal risk," which arises when depositors or investors withdraw their funds and switch to other financial products (Budiman et al., 2019). Hence, Islamic banks may also experience bank runs, resulting in illiquidity issues too.

The management of liquidity is crucial in both conventional and Islamic banking. However, the difference in Islamic banks is unique and even more challenging because the instruments used for liquidity creation, such as deposits, are not interest-based for Islamic banks. As Mohammad et. al. (2020) stated, liquidity creation issues have not been empirically studied within Islamic banking and finance.

1.0.4.2 Shariah Concern Issue

Islamic banking system is established based on the foundation of deposit-taking and commercial banking. Whilst Islamic financial system is rooted on the basis of Al-bay (sale contract) of Maqasid Shariah. However, Shariah concerns confront the current Islamic banking system (Rosly, 2019). According to Islamic teaching, the Quran forbids riba and supports Al-bay as a substitute. Among other things, Al-bay describes the wholesale and retail company, but the major lesson is the needs to taking risks in business. The legal maxim "*al-ghunm bil ghurm*" implies that profit is accompanied

by loss, and highlights a basic norm that one must incur risks to justify taking rewards (The Qu'ran, 2:275). Regrettably, Islamic banks were born into a high-leverage market geared for usury-based, and sadly, Islamic banking's pioneers may have ignored this critical issue (Rosly, 2019). On another note, Islamic banks must also avoid taking excessive risks that endanger deposit protection. This eliminates Islamic banks' ability to pursue real-estate transactions whose risk profiles differ from that of deposit-taking banks (Rosly, 2019).

Rosly (2019) discussed the objectives of Maqasid Shariah concept, and argues that the contemporary banking cannot achieve societal aims. One of the reasons is after accounting for inflation, depositors who lend money to banks would get less returns' income. Depositors who lend to banks do so at low-return rates and without necessary collateral. Cheap deposits used by banks to fund big firms can impair income imbalance and social unrest. Small and new firms without collateral are usually losing out on loans from banks. Small firms could create jobs but are unable to do so because bank loans are primarily for bigger firms that could generate them bigger profits.

The emergence of Shariah governance, especially in Islamic Financial Institutions (IFIs), is consistent with the requirements of Maqasid Shariah. According to Abozaid and Dusuki (2007), to achieve the actual meaning of Maqasid Shariah, Islamic banks must ensure that all transactions are Shariah-compliant, not only in legal terms and economic terms but also in ethical terms such as the fiduciary obligations. Furthermore, Shafii et. al. (2010) stated that the development of Shariah governance is essential for determining the procedures of Maqasid Shariah for each of the Islamic products (i.e., Islamic bank deposit) and services provided by Islamic banks. However,

due to the tremendous development of the Islamic banking industry, Malaysian Shariah governance still appears to be at a crossroads (Kamaruddin et al., 2020).

In brief, to attain Islamic banks' financial and economic stability, Shariah governance in Islamic products (in this research, Islamic bank deposits) is an issue that needs to be addressed. As highlighted earlier, there is a gap in this area since it is not widely covered. Hence, a study is required to determine whether the performance of Islamic bank deposits is influenced by the requirement of Shariah governance standards which applies Maqasid Shariah. However, this research is limited only to one Shariah-based regulatory requirements for Islamic bank deposits; Section 2 (1) of the IFSA 2013.

In theory, Section 2 (1) of IFSA 2013's introduction of investment accounts should allow Islamic banks to use true sale credit financing products more freely (Rosly, 2017). In addition, the Act provides more flexibility in terms of investing requirements (Engku Ali & Oseni, 2017). Islamic banks are likely to adopt a new format for investment accounts that represents the actual performance for underlying assets or business activities (Hasan, 2016). Prior to the IFSA, there was no clear distinction between risk-sharing and risk-transfer activities in Islamic banks (Budiman, et al., 2019). For example, murabahah investment accounts were ambiguously recognized as deposits and liabilities (Alaeddin et. al., 2016). Because the investment account holders own the credit sale risk, Islamic banks should be free of unprotected capital stress, and shareholders should be free of excessive capital costs (Rosly, 2017). Furthermore, due to the Act's non-guaranteed principal structure,

investment accounts like mudharabah (partnership) are ineligible for deposit accounts (Ahmad, N. H. B., & Ariff, 2020).

Islamic banks may face significant obstacles and costs in fulfilling those regulatory changes of IFSA 2013 since they must update their product portfolios to include risk-sharing products traded on capital markets (Budiman et al., 2019). Still, IFSA 2013 could have unintended consequences for investors, such as lower profit payments and "withdrawal risk," which occurs when investors withdraw their cash and migrate to other financial products (Budiman et al., 2019). Hence, Islamic banks may experience bank runs, resulting in illiquidity issues. The aforementioned Maqasid Shariah issues concerning Islamic deposits must be treated seriously by Islamic banks. Research should be conducted to discuss the issue, as mentioned earlier, to find a feasible clarification. It is intended that this research be able to deliver meaningful insights as well as reasonable solutions.

Many Muslims believe Islamic banks are free of riba in all aspects of banking. This means that banks do not charge interest on their deposit products. Unlike Islamic banks, conventional banks pay interest to depositors. Deposits in conventional deposit accounts get a fixed interest rate regardless of the bank's performance. This explains why a bank pays interest to depositors even when it is losing money. If the bank makes more money than projected, only a fixed percentage goes to the depositors. This means that once chosen, such deposits guarantee a predetermined return. As a result, the deposits account return is assured in conventional banks. Nevertheless, Islamic banks' policies vary. Relatively, Islamic banks make no "promises" on deposits or

investments. Islamic banks compensate customers with a hibah based on the bank's performance. An Islamic bank's voluntary gift of currency to depositors is called hibah. Hibah is not approved if the bank does not generate a profit. Also, the depositor need not fear losing money if the bank does not make a profit. Upon request, the depositor receives his principle back (Amin, 2013).

Islamic banking is built on a profit and loss sharing business model that follows Shariah law. Regrettably, a study by Chong and Liu (2009) was unable to find the discrimination mark between the criterion presented by dual type of banking system. Additionally, some scholars argue Islamic and conventional banks are almost identical (Ibrahim, 2015). As eloquently stated by Chong and Liu (2009), Malaysian Islamic banks' profit and loss sharing-based assets only represents a modest fraction of their assets. Moreover, the return on Islamic deposits is closely tied to conventional bank deposit rates (Ibrahim, 2015).

Concerningly, some literature implies Islamic banks are not practicing interest-free activities. Chong and Liu (2009) observed that overall Islamic deposits returns are not considerably different from conventional deposits. Kholvadia (2017) revealed that changes in interest rates drove changes in Islamic deposit investment rates, but not the other way around. Khan (2010) also substantiates these arguments in a few examined countries. Although these characteristics may not have distinguished Islamic banks from conventional banks, it is important to emphasize that the assets and liabilities of Islamic banks are still managed by Islamic contractual structures (Ibrahim, 2015).

It is vital for Islamic banks as a reliable financial intermediary to consider the interest rates issue as claimed by the above scholars. Hence, a new perspective of study

is needed to determine whether the performance of Islamic bank deposits' is linked to the conventional interest rates as claimed by the aforementioned studies. Therefore, this research utilized the overnight policy rates (OPR) as the substitute variable for the conventional interest rates since OPR is the foundation for the interest rates setting in the banking system.

1.0.4.3 Financial Intermediation Issue

Banks must act as middlemen to help depositors locate borrowers or find depositors (Ghazali & Mustafa, 2020). Unlike conventional banks, Islamic banks do not charge or earn interest on all financial transactions including deposits. Instead, Islamic banks share profits and losses with depositors. In addition, Islamic finance does not aim to financial intermediation as the ultimate goal (Nawaz, 2019). These institutions exist to bring moral and fiduciary financial solutions to society. Its aim is more holistic that is providing benefits to all as imbedded in the Maqasid Shariah. As such, the funding and activity structures of Islamic and conventional banks differ. Islamic banks do not share the same principles, regulations, or experiences as conventional banks (Zarrouk et. al., 2016). Thus, there are differences in financial intermediation between both type of banks (Tabash et. al., 2017).

Islamic banking is defined as financial entities that work to adopt and materialize Islamic financial and economic principles in the banking sector (Menacer et. al., 2019). According to Hassan (1999), Islamic banks are financial institutions whose rules, operations, and status indicate their duties to *Shariah* (Islamic law) principles. This indicates that Islamic banking is guided by Islamic economics and

adheres to Shariah law (Aburime, 2008). In Islamic banking, assets and liabilities are anticipated to be integrated such that borrowers and banks share profits and losses, which in turn shares profits and losses with the depositors. The Islamic bank's business philosophy of financial intermediation stresses that the Islamic bank is a business entity that runs the capital provided by the depositor or investor (Nor et al., 2015).

As such, Islamic banking system emerged as a new intermediation system. Islamic banking offers Shariah-compliant products and services that virtually eliminate interest (riba). The World Bank and the International Monetary Fund (IMF) also acknowledged Islamic financial products as an alternative financial intermediation method (Sundararajan & Errico, 2002; World Bank, 2013). Accordingly, Islamic banks' efficient financing procedure will likely boost financial intermediation efficiency, allowing firms to better access credit (Khan et. al., 2020).

The deposit contract generates a collective action dilemma among depositors which might resulting in a bank run and total disintermediation. Previous researchers debated the disintermediation and reintermediation of conventional banks, but continuously ignored the prospect of disintermediation and reintermediation through Islamic banks (Naqvi et. al., 2017). Overall, the theory of financial intermediation applies to both conventional and Islamic banking since banks are financial intermediaries. However, their objectives differ, with the conventional banking goal is profit-making while the unique structure of Islamic finance and banking aims for a wider goal of achieving Maqasid Shariah. Literally, an independent Islamic bank is required to deliver greater advantages to the community and ummah (Nugroho et al.,

2020). However, Islamic banks are still reliant on management from their parent-conventional bank. Thus, some studies suggest that Islamic banks have more substantial agency issues. One of the primary regulatory concerns regarding investment accounts is that they do not satisfy the legal criteria for being classified as deposits (Archer & Karim, 2009; Nienhaus, 2007). Besides, Islamic banks should not guarantee the depositors' principal or returns according to the principal of Islamic teaching.

The establishment of Islamic banks in Malaysia especially after millennium years has resulted in increased competition and less concentration within the market structure of a banking sector. Existing Islamic banks must be more adaptable in dealing with this new market structure's potential hazards and issues (Basri, 2020). Greater number of Islamic banks' entrance into the market has substantially influenced the structure and competitive dynamics of the Islamic banking industry. However, in addition to the penetration of Islamic banks including foreign Islamic banks, various factors, including mergers among local banks, changes in monetary policy by the central bank, improvements in the regulatory framework, the potential risk of a COVID-19 pandemic resurgence, prevailing economic uncertainties, escalating political conflicts, the threat of catastrophic climate change, and the underwhelming labor market conditions may significantly impact the market dynamics of the Islamic banking industry. Consequently, the new competitive Islamic banking market structure warrants further examination and discussion.

From a policy-maker standpoint, allowing more Islamic banks to enter the Malaysian banking industry is paramount to enhancing productivity and efficiency. However, in light of the heightened rivalry, Islamic banks as financial intermediary obligated to improve their effectiveness to sustain competitiveness, relevancy, and/or survival. Furthermore, as competition within the Islamic banking industry grows, smaller banks, must exert significant efforts to increase business volumes and strengthen their positions. For instance, the entrance of new Islamic banks into the market is encouragingly influencing the growth of Islamic products, such as Islamic bank deposits. As a result, Islamic banks' product developments may pose substantial challenges to the local Islamic banking industry, whose operating environment has changed swiftly, inevitably affecting their performance.

In brief, the intensifying competition in the banking business as a financial intermediary may be attributed to the presence and expansion of Islamic banks. Since deposit-taking is the primary purpose of bank formation, this research aims to examine the performance of bank deposits offered by Islamic banks. Implementing and applying strategic financial intermediation practices in the bank's operational operations might increase deposits' creation. Thus, the performance of Islamic bank deposits may be influenced by heightened banking market rivalry, particularly in cases when both conventional and Islamic banks are present. Hence, it is vital to thoroughly analyze the bank-specific, macroeconomic, and regulatory variables, that might potentially influence the level of deposit acquisition in Islamic banks. Examining the impact of internal and external factors into the Islamic banking sector and particularly the factors that affect the liquidity of Islamic deposits is of utmost importance. This

necessitates immediate consideration of the matter described in the previous paragraph.

The main aim of this study is to examine the variables that influence the performance of liquidity in Islamic bank deposits, explicitly focusing on the internal and external factors. The motivation for this study stems from the urgent concern regarding the subpar performance of Islamic banks and the competitive dynamics between conventional and Islamic banks. Moreover, this study delves into liquidity creation via Islamic deposits by analyzing the deposit-taking operations carried out by Islamic banks. Previous researchers have not yet explored this particular element. This research seeks to fill a gap in the current literature by providing new empirical evidence on the variables that determine the performance of Islamic bank deposits. The current state of research on the empirical examination of deposit performance in Islamic banks, particularly concerning the impact of Islamic banks entering the local banking business, is limited and has not been thoroughly investigated.

Several main problems were highlighted concerning bank deposit performance in the following subsections, and several research gaps have been identified based on the reviews of past studies. These gaps are evaluated in terms of contextual, empirical, and theoretical.

1.1 Problem Statement

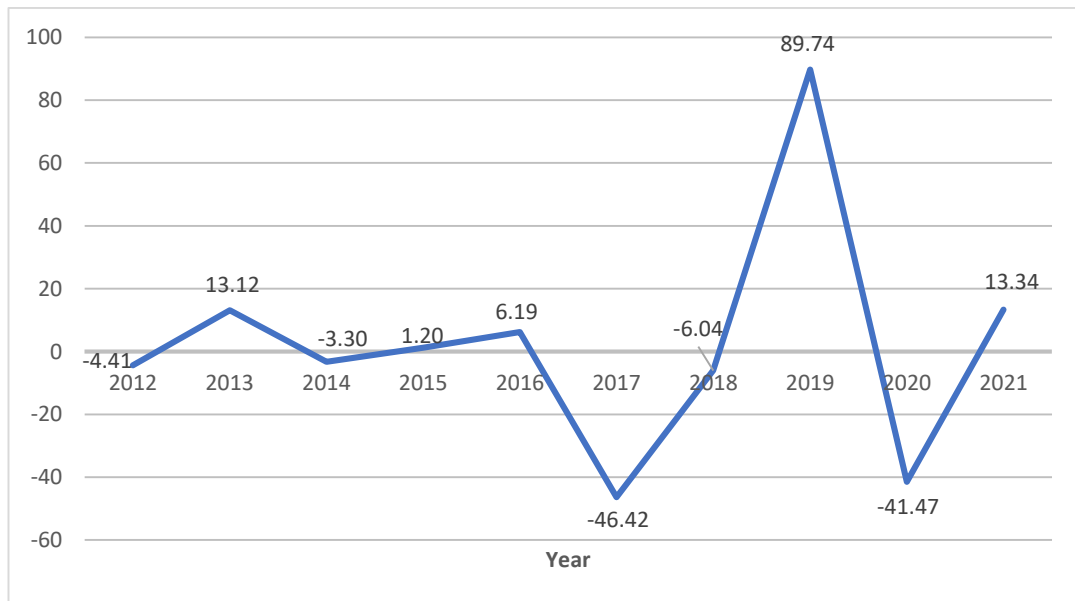
Arising from the issues deliberated in the section 1.4, the coexistence of Islamic and conventional banks has given the banking system a dual character. Nonetheless, the two systems forced the Islamic banks and conventional banks to compete for deposits. This is one of the most challenging encounters in the growth of the Islamic banking sector for a Muslim country such as Malaysia.

1.1.1 Unstable composition of deposits as funding sources

The following Figure 1.3 illustrates the composition of deposits for funding sources in banking and financial institutions of Malaysia.

Figure 1.3

Composition of Deposits for Funding Sources in Banking and Financial Institutions of Malaysia, 2012 – 2021.



Note: Researcher's calculation based on raw data from Bank Negara Malaysia

Literally, the deposits are always expected to contribute to a large percentage of the banks' total funding in banking activities in this millennium years. However, according to Linn and Ang (2016), Malaysian banks generally relied on deposits for liquidity only until the early 2000s. Figure 1.3 shows an unstable composition of deposits as a source for funding in the banking and financial institutions in Malaysia for the past decade. The deposit generation growth experienced a decline in the years of 2012 (-4.41%), 2014 (-3.30%), 2017 (-46.42%), 2018 (-6.94%), and 2020 (-41.47%). Whilst positive growth in deposits can be observed in the years of 2013 (13.12%), 2015 (1.20%), 2016 (6.19%), 2019 (89.74%), and 2021 (13.34%).

The reason for declining were impacted by the issues of the rising inflation such as the elevated import prices and pricing at the point of production. Malaysian inflation reached its highest level in a decade, with prices almost doubling from 2.1% in 2016 to 3.9% in 2017. The primary cause was the increased in transportation expenses which brought on by the rising fuel prices. On the other hand, the Malaysian economy grew by 4.3% in 2019 despite the difficult global economic climate and disruptions in domestic supplies. This growth was fueled by strong private sector expenditure. Thus, it seems that the composition of deposits for funding sources in banking and financial institutions in Malaysia is influenced by the fluctuations in economic situations but this was greatly felt by Islamic banks.

The effects of the COVID-19 pandemic have not only endured but also transformed livelihood of people. Consumer prices are now inflationary, as opposed to deflationary during the pandemic's onset. The World Bank (2023, March) data shows

the inflation rate by consumer prices for Malaysia fell to -1.1% in 2020, from 0.7% in 2019, and later increased to 2.5% in 2021. Notably, Malaysia experienced mitigated inflationary pressures since the outbreak of the pandemic (Bank Negara Malaysia, 2021a). Hence, continuous and preventive movements are essential to control the inflation rate, particularly by the economic sector, such as the Islamic banking sector.

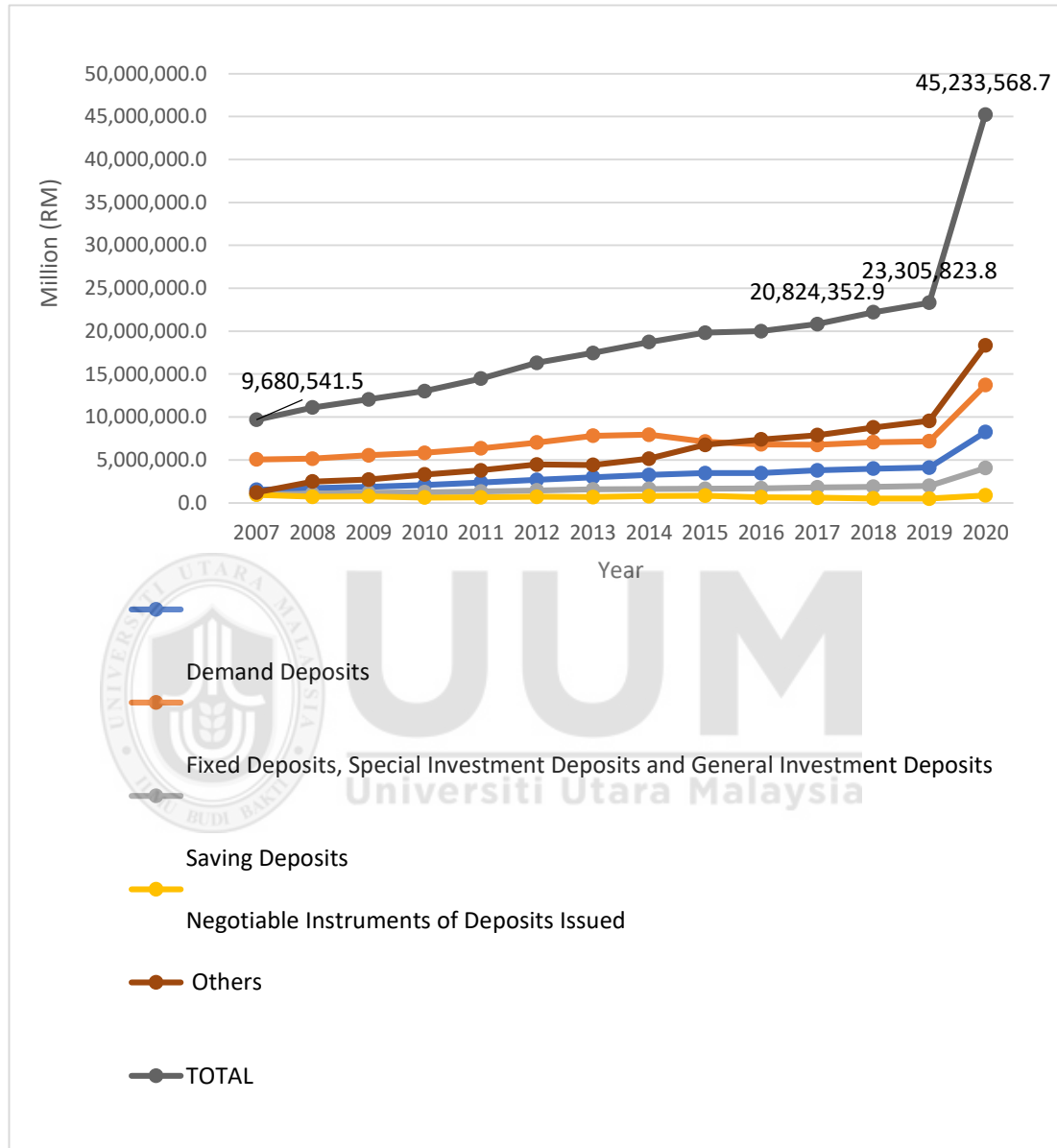
It is vital to preserving the stability of the Islamic banking sector, as it ties to the economy at large because of its interconnectedness with the overall economic performance (Adewale, 2020). The Islamic banking sector faces immediate pressures on liquidity generation due to the economic downturn, and the duration of this Covid-19 post-pandemic is currently unknown. To secure the sustainability of Islamic deposits in the midst of a crisis, Islamic banks may face the challenging situation of attracting and keeping depositors. It is significant to indicate that the economic conditions might impact the Islamic bank's deposits sustainability and are related closely to the bank's liquidity, profitability, and stability.

1.1.2 Declining pattern in the Islamic bank deposit's performance

Figure 1.4 and Figure 1.5 show the types of deposit in the Malaysian banking system: demand deposit, fixed deposit, special investment deposit, general investment deposit, saving deposit, negotiable instruments of deposits issued, and others.

Figure 1. 4

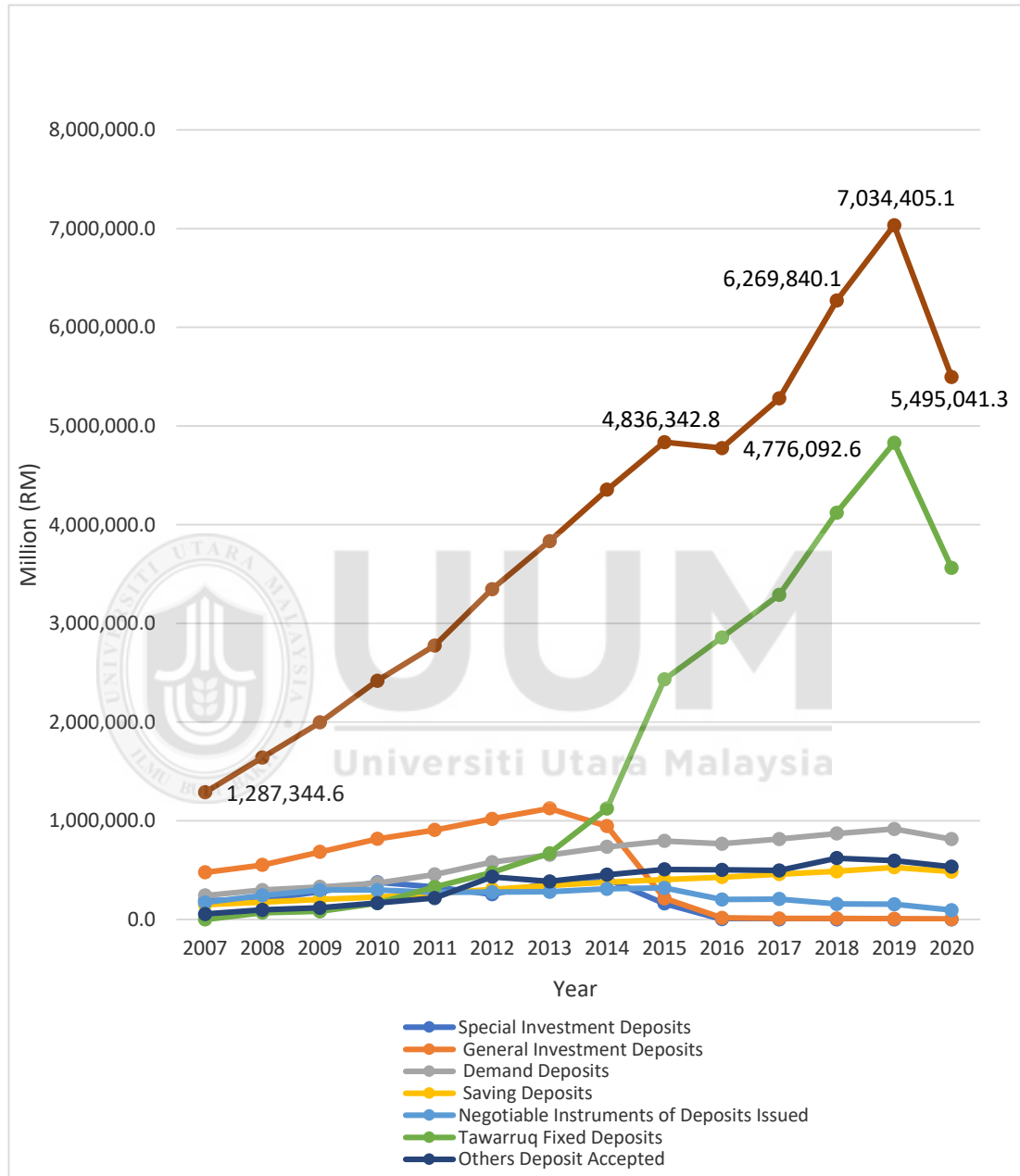
Total Deposit by Type in Banking System, 2007 – 2020



Note: Researcher's calculation based on raw data from Bank Negara Malaysia

Figure 1. 5

Total Deposit by Type in Islamic Banking System, 2007 – 2020



Note: Researcher's calculation based on raw data from Bank Negara Malaysia

According to Figure 1.4 and Figure 1.5, the total deposits in nominal amount show a similar pattern for both the Islamic banking system and the entire banking

system. The deposits' performance climbed from 2007 to 2019. However, in 2019, there was a noticeable fall of deposits inside the Islamic banking system. Refer to Figure 1.5. The underlying reason for the falls were mainly contributed by the unstable global economic climate and the disruptions in domestic supplies.

The trend analysis objectives are to compare the movement of bank deposit performance in the Islamic banking sector with the direction of bank deposit performance in entire banking system. From 2007 until 2013, each graph shows an increasing amount of bank deposits generation. From 2014 until 2016, the graph shows close trends with slightly decreased deposits performance for both types of banking system. The 2014-2017 declined patterns in banking system were affected by decreased generation in fixed deposits, special investment deposits, and general investment deposits. Whilst the 2014-2016 declined patterns of the Islamic banking system clearly indicates that it was affected by the lower amount of general Investment deposit generation. The reasons behind these 2014 - 2017 declined patterns of fixed deposits and investment deposits in banking system occurred when Malaysia's markets have taken a beating from commodity price drops and a political scandal, particularly in the climax economic challenges during 2015.

The apparent increasing movement trends from *tawarruq* fixed deposits are mainly because of the evolution in Islamic deposit from *wadiah* to *tawarruq* starting 2013. It was also generally affected by the advancement initiatives of the Islamic financial system and the innovation of Islamic banking products and services throughout these recent years (Bank Negara Malaysia, 2016). In addition, an Islamic

finance innovation has demonstrated that Islamic banking offers a greater range of Shariah-compliant products. In Malaysia currently, there are already over 100 different types of products and services, many of which offer attractive returns comparable to those offered by conventional banking.

The COVID-19 economic downturn in 2020 is presumably shows a negative impact on the generation of Islamic bank deposits with a declined pattern particularly on the *tawarruq* fixed deposits. According to data from the World Bank (2023, March), real-world GDP growth dropped to -3.1% in 2020 (2021:5.9%; 2019:2.6%), plunging the global economy into a severe recession. Like most nations worldwide, the pandemic's unexpected economic shocks caused Malaysia's GDP growth to drop precipitously, reaching its lowest level since 1998 (-7.4%). The GDP growth of Malaysia has fallen to -5.5% in 2020 (2021:3.1%; 2019:4.4%) due to highly challenging economic operating conditions both domestically and globally.

The decline in 2019 was also due to the Covid-19 pandemic. The pandemic affected economic performance negatively and cause the business losses and collapse. Consequently, Islamic bank depsoits experienced a declined particularly Tawarruq as customers experience difficulties to place deposit due to poor business performance. The shortfall in Islamic bank deposits was a main concern because it limits the Islamic banks capacity to provide financing. It also affected the bank's liquidity position and profit growth. From Islamic banking industry for the real issue is tough competition from conventional counterparts to obtain deposits from customers. The declining percentage of deposits indicates that Islamic banks may encounter challenges with

liquidity and liquidity risk in the future particularly during economic recession. Hence, there is a pressing concern regarding the methods Islamic banks can employ to entice existing and prospective depositors to entrust their funds.

1.1.3 Limited Studies

While conventional banks may be influenced by Islamic bank competition, Islamic banks are also affected by their peers in mostly Muslim nations (Meslier et al., 2017). Meslier et. al. (2017) has highlighted and acknowledged the major effects of parallel banking markets for competition and bank stability. The findings reveal significant differences between Islamic and mainstream banks' pricing strategies. Conventional banks which have more market power simply set lower rates (and/or vice versa), whereas Islamic banks do not consider market power to be a factor. Moreover, (Mushtaq & Siddiqui, 2017) argues the need for Islamic banks to have the greater deposits especially in countries with more Muslim populations.

This present the contextual gap by investigating the factors affecting performance of Islamic bank deposits. As per the knowledge and concern from previous literature, hardly any past studies investigated comprehensively the factors influencing Islamic bank deposits involving three major aspects; Islamic bank-specific financial factors, macroeconomic and regulatory factors, which covers two related theories; liquidity creation and financial intermediation, within the context of Maqasid Shariah's concept applications. Previous literature only covers savings determinants (Solarin et al., 2018) but not very much on deposits.

An analysis constructed by Ab Rahman et. al. (2021) from 33 previous studies on bank deposits found that only four studies focus on deposit generation of Islamic banks in Malaysia. Furthermore, the finding reveals that even studies on deposits in other developed economies such as Gulf Cooperation Council (GCC) are also few and received less attention. What is more urgent is that comprehensive empirical analysis has hardly been published on Islamic banks' deposit performance. Therefore, the issue of low deposit generation received by Islamic banks has not been resolved satisfactorily to assist the Malaysian Islamic banks.

Until 2020, the reported determinants of deposit are interest rates ((Ali et al., 2019; Dincer et al., 2019; Solarin et al., 2018; Ferrouhi, 2017; Mushtaq & Siddiqui, 2017; Boadi et al., 2015; Eriemo, 2014;), liquidity (Ünvan & Yakubu, 2020) , profitability (Ünvan & Yakubu, 2020), capital adequacy ratio (Abdul Karim et al., 2014a), gross domestic product (Ali et al., 2019; Solarin et al., 2018; Ferrouhi, 2017; Boadi et al., 2015; unemployment (Ferrouhi, 2017) and inflation (Unvan & Yakubu, 2020; Ali et al., 2019; Ferrouhi, 2017; Boadi et al., 2015; Eriemo, 2014).

The above factors are mostly from conventional banks, and the studies are from varieties of time frames. A survey of these literature highlights those factors from Islamic banks have not been empirically tested on deposits performance from 2000 until 2020. Different results are expected from the previous studies since this research used different proxies in view of financing contracts and deposit structures in Islamic banks. As such, in this study, **bank-specific financial factors** like bank interest rate is replaced by the overnight policy rates, and financing by loan to deposit ratio. New

variables such as bank concentration, bank size and customer type are included in the model since they have not been tested against deposit performance for conventional or Islamic bank before. This represents new variables to fulfill the **empirical gap**.

The inconsistencies and mixed findings from conventional and Islamic banking systems concerning macroeconomic variables and deposit performance need further studies, especially in Islamic banking of Malaysia which experienced many **macroeconomic and regulatory** changes. For Islamic banking a prominent regulation is introduced that is Section 2, IFSA 2013. The effect of IFSA 2013 has not been tested in deposit performance model which was performed in this research.

Another empirical gap found from the literature review is almost no usage of moderating variables in the research framework regarding deposit performance. According to Baron & Kenny (1986), a moderating variable is a variable that influences the direction and/or strength of the relationship between an independent variable and a dependent variable. In the context of this study, there is an urgent need to identify a moderator that would strengthen the association between the determinants with the deposits of Islamic banks. This has not been done before. For this purpose, the type of Islamic banks' customers was used as moderating variable in the research framework.

Another research gap is **theoretical gap**. Two theories are relevant to bank deposits performance: liquidity creation and financial intermediation.

Although theory of financial intermediation is well referred in banking studies, banks function stresses two major roles: generating liquidity and accepting risk. The role of banks in creating liquidity in risk management are not well discussed pertaining to deposits of Islamic banking. Gorton and Winton (2017) claim that deposits are more efficient as liquidity hedges than equity capital investments, and higher capital ratios move investors' funds from deposits to bank capital. Since deposits are liquid and bank equity is illiquid, when the capital ratio is greater, investors' overall liquidity decreases (Berger & Bouwman, 2007). Therefore, for deposits to generate liquidity, banks have to observe their capital to be sufficient to cover risks. In this context, relationship between capital ratio and deposits has not been investigated.

Since there is still no common appropriate approach on determining the efficiency of bank deposits, the literature remains controversial. This is another problem. Providing a thorough understanding of the determinants of deposits is a significant subject to clarify the mixed approach of deposit in banking process. The liquidity problem occurs because deposits are more in the short-term maturity period, whereas loans are more in the long-term maturity period. Financial intermediation theory has developed into new advancement phases transcending from financial intermediation to disintermediation and re-intermediation. Past theories only evaluate deposits from input and output approach to profit generation is prevalent among conventional banks. Therefore, there is a theoretical gap because Islamic banks has different goals than the profit motive of conventional banking. Islamic banking goal is to fulfill the tenets of Maqasid Shariah and not only on profit.

1.2 Research Questions

This research attempts to answer the following questions:

- 1) What are the relationship between bank financial factors and the performance of bank deposits in Malaysian Islamic banks?
- 2) How do macroeconomic and regulatory factors influence the performance of bank deposits in Islamic banks of Malaysia?
- 3) Do business enterprise depositors (customer type) moderate the relationship between financial, macroeconomic, regulatory factors and the performance of Islamic bank deposits?

1.3 Research Objectives

This research aims to empirically examine the determinants of bank deposit performance in Islamic banks of Malaysia. The specific objectives of this study are:

- 1) To examine the relationship of banks' financial factors with the deposits' performance in Islamic banks of Malaysia.
- 2) To assess the relationship of macroeconomic and regulatory factors with the deposits' performance in Islamic banks of Malaysia.
- 3) To determine business enterprise depositors moderate the relationship between independent variables and dependent variables.

1.4 Significance of the Study

The expected findings from this research would be significant to researchers and banking literature since there are still very limited empirical investigations related to the Malaysian Islamic bank deposits performance in the past. In view of scarce literature on bank deposits' performance, it is anticipated that the findings may contribute to new knowledge with more references made available for future researchers. Hence, researchers and scholars could benefit from this study to uncover critical areas relating to the determinants of bank deposits performance which are still not covered by previous researchers. Thus, a new conceptual and research framework are developed in order to have more enrichment in the Islamic banking literature.

In addition, it is strongly hoped that this research is able to provide significant contributions and inputs to Islamic banks' depositors, investors, managers, shareholders, stakeholders, policymakers, and researchers. For the banks' financial managers and decision-makers, this research is significant in providing the analysis of banks' deposit performance in order to confirm not only the liquidity performance and the stability of the bank against any type of future risks and crises but also to gain public confidence and trusts towards the banking sector in the economy.

Another significance from this research, is the knowledge and information to potential depositors regarding the prospects of depositing their money in Islamic banks. By understanding the relevant determinants of Islamic banking deposits generation, it is strongly hoped that this research would be beneficial to increase the volume of deposits in the Islamic banks of Malaysia.

1.5 Scope of the Study

This quantitative study examined and explored the determinants of banks deposit performance among 16 Islamic banks of Malaysia. The data is limited to secondary data only, which was gathered from the Islamic banks Annual Reports, Bank Negara Malaysia, World Bank, Department of Statistics Malaysia, IFSA 2013, and other explicitly specified sources. The study period covers from 2000 until 2021.

The discussion of variables consists of the dependent variable (*Islamic bank deposits performance*), the independent variables (Islamic bank-specific financial factors; *net profit margin, return on assets, return on equity, non-performing financing, financing-to-deposit ratio, capital adequacy ratio, bank concentration, bank size*, and macroeconomic and regulatory variables; *gross domestic product, inflation, unemployment, overnight policy rate, and Section 2(1) of IFSA 2013*), and moderating variable (*customer type - business enterprise depositors*). The related theories include financial intermediation theory and liquidity creation theory. For an Islamic worldview, discussion on the Maqasid Shariah also encompasses Shariah governance application concerning Islamic deposits.

1.6 Definition of Key Terms

Table 1. 2

Definition of Key Terms

Key Terms/Variables	Definition of Terms
Islamic Bank Deposit	“Islamic deposit” means a sum of money accepted or paid in accordance with Shariah principles. The volume of Islamic bank deposits are taken from the balance of total deposits in annual financial reports of Islamic banks in Malaysia.
Profitability	Profitability is a measure of a company's capacity to make profits, which are the financial gains obtained from its operations.
Liquidity	The liquidity creation of Islamic banks is generated from the Islamic deposit-taking as one of the sources in funding.
Net Profit Margin	Net Profit Margin is a component of the profitability ratio, which measures a business's ability to generate a profit.
Return on Assets	Return on Assets is a financial indicator that calculates net income earned relative to total assets to determine a company's profitability. It

	is an essential measure of a company's efficiency in generating profits from its assets.
Return on Equity	Return on Equity is a financial metric utilized to evaluate an organization's profitability and efficacy in generating returns on its shareholders' equity.
Capital Adequacy Ratio	The capital adequacy ratio assesses a bank's available capital in relation to risk-weighted credit exposures. It is also known as the capital-to-risk weighted assets ratio.
Bank Concentration -Herfindahl-Hirschman Index (HHI)	The HHI is used to evaluate the level of ownership concentration within a market structure, in relation to the impact of competition among banks in the Islamic banking industry.
Financing to Deposit Ratio	The financing to deposit ratio is used to evaluate the extent to which an Islamic bank relies on external sources relative to its deposit base for supporting its financing operations.
Non-performing Financing	Non-performing financing (NPF) describes the financing or funding supplied by Islamic banks that is not being returned in accordance with the agreed-upon conditions.

Bank Size	The size of the Islamic bank is based on the total assets of Islamic bank.
Inflation	Inflation occurs when the price level of an economy rises.
Gross Domestic Product	Gross domestic product is a measure of the size and performance of the economy that is adjusted for price changes.
Unemployment	The unemployment rate is calculated by dividing the number of unemployed by the total number of employed.
Overnight Policy Rate	The overnight policy rate (OPR) is a key tool used by central banks to implement monetary policy. It is the primary monetary policy instrument Bank Negara Malaysia (BNM) uses to influence the money supply, inflation, and economic growth.
Section 2(1) IFSA 2013	A sum of money received or paid according to Shariah regulations is referred to as an "Islamic deposit." A Shariah-compliant account into which money is paid and received for investment purposes is referred to as an "investment account." (Islamic Financial Services Act 2013, 2013)
Customer Type	Deposits are funds placed in a bank by a client or
- Business Enterprise	depositor of a business in order to generate a profit

Deposit	and/or for safekeeping.
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1.7 Organization of the Study

This thesis is organized into five chapters. Chapter One presents the background of the study, Islamic banking in Malaysia, bank deposit performance, current issues, problem statement, research questions, research objectives, and definition of key terms. The justification of the study is included in this chapter to provide a rationale for the study. The significance of the study as well as the scope of the study, are also explained in Chapter One.

Chapter Two provides a review of past literature on Islamic bank deposits regarding its role and importance, dependent variable, independent variables, regulatory requirements, moderator variable, related concept, and theories of the conceptual framework. The discussion of variables consists of 15 variables that are presented from the relationship of one dependent variable, 13 independent variables, and one moderating variable. Three models of empirical specification are specified from the variables. The conceptual framework is also included in Chapter Two.

Chapter Three presents the research framework, which comprises Islamic bank deposit performance as the dependent variable and its' 13 potential determinant factors as independent variables and one moderating variable. Chapter Three also discussed the methodologies, which described the research design, empirical model specification, operational definition and measurement, population and sampling, data

collection procedures, and data analysis techniques. This chapter uses the Stata econometric package version 17 to conduct the empirical analysis. To assess the robustness of the data, as an econometric method, several essential statistical approaches, and tests, such as descriptive statistics, the skewness and kurtosis test for examining the data distribution, and the Pearson correlation matrix test to assess the multicollinearity between examined variables. Beforehand, data screening is performed to identify outliers using a scatter plot, and the results demonstrate that the data is normally distributed. Furthermore, the Breusch-Pagan LM, Chow, and Hausman tests are employed to check the fittingness of using panel data regressions with either pooled ordinary least square, fixed, or random effects.

Accordingly, the empirical model in Chapter Three measures the determinants of the Islamic bank deposits of the examined Islamic banks by utilizing panel data regressions with ordinary least square, fixed, or random effects models with robust standard error. It should be noted that for the sensitivity test, the research uses an additional test by using a cluster option to cater the heteroskedasticity and serial correlation problems. In addition, panel data regressions with firm effects is conducted to confirm the firm-specific effect results. Thus, the statistical findings in this chapter may provide relevant answers to the research objectives.

Chapter Four exploring the findings to fulfill the research objectives. The discussion of the findings presents a critical descriptive analysis on the assessed variables. In addition, this chapter provides further sensitivity tests to examine the robustness of the obtained empirical results. This chapter attempts to assess the

determinants of Islamic bank deposits' results through a dynamic panel data regressions model, which helps to locate the potential factors that may affect the deposits of Islamic banks. In such an attempt, this chapter emphasizes external and internal factors. Moreover, a moderating variable is also taken into consideration, which is business enterprise depositors.

As for the structure of the Chapter Four, it begins with estimating the first statistical model of the expected association between bank-specific financial determinants and Islamic bank deposits. This is followed by assessing the second model of the expected association between macroeconomic and regulatory determinants and Islamic bank deposits. Then, the third model of the expected association between moderating variable, the significant independent variable, and the dependent variable of Islamic bank deposits. The statistical analysis starts with descriptive, skewness, and kurtosis of the examined data, followed by running the correlation and regressions analysis. This empirical chapter performs further sensitivity tests to complete the study and assess the reliability of the findings.

The final of Chapter Five presents a concise overview of the study outcomes and a comprehensive analysis of the primary discoveries. Additionally, it emphasizes the related theoretical, conception and the policy implications that contributed to the identifying specific recommendations. This chapter also underlines the research limitations and motivations for a wider scope of future research. Finally, this chapter brings the research journey to its conclusion.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter elucidates the reviews of prior studies on Islamic bank deposits regarding its role and importance, dependent variable, independent variables, regulatory requirements, moderator variable, related concept, and theories of the conceptual framework. The discussion of variables consists of the dependent variable (*Islamic bank deposits performance*), the independent variables (Islamic bank-specific financial factors; *net profit margin, return on assets, return on equity, non-performing financing, financing-to-deposit ratio, capital adequacy ratio, bank concentration, bank size*, and macroeconomic and regulatory variables; *gross domestic product, inflation, unemployment, overnight policy rate, and Section 2(1) of IFSA 2013*), and moderating variable (*customer type – business enterprise depositors*). The related theories include financial intermediation theory and liquidity creation theory. For an Islamic worldview, discussion on the Maqasid Shariah also encompasses Shariah governance application concerning Islamic deposits. This literature review focuses on the Islamic bank deposits and its determinants; however, the discussion in each subsection includes the conventional banking perspectives aside with the Islamic banking perspectives for a clearer understanding. The organization of this chapter follows the specific scope within the context of the objectives of this research. Finally, this chapter ends with a summary of the literature review.

2.0.1 Majority Muslim Population in Malaysia

According to census in 2020, 63.5% of the population in Malaysia practices Islam; 18.7%, Buddhism; 9.1% Christianity; 6.1%, Hinduism; 9%, other religious groups. Despite the country is being dominated by Muslims, the Islamic banking sector has not reached its targeted potential depositors from this religiosity group. Ideally, with the dominant population of Muslim, Islamic bank deposits is supposedly targeted as the most trusted channel for Muslim depositors. However, despite that Islamic banking is open for Muslim and Non-Muslim customers, the Islamic banking market share remains negligible, which is less than 50% of the conventional banking system.

Kumru and Sarntisart (2016) highlighted the religious convictions could have a considerable impact on individual decisions. Supposedly, Muslims who have a strong faith in Islam may avoid non-Shariah compliant products, less willing to keep formal accounts, less likely to save money at banks, more loyal to Islamic banks, and avoid conventional banks (Meslier et al., 2017b; Abedifar et al., 2016; Anginer et al., 2014; Beck et al., 2013). On further note by Meslier et. al. (2017b), the conventional banks will have a harder time attracting Muslim customers in nations with a larger Islamic population.

There are limited studies particularly from Muslim majority populations to address the unachievable Islamic banking growth target and parity positioning with conventional banking. This justifies that further investigation should be conducted to identify factors that could stimulate Islamic bank deposits performance.

2.1 Role and Importance of Bank Deposits

While theories are the foundation of this research, it is equally important to understand the practical aspect of bank deposits. In this subsection, the role and importance of bank deposits and banking regulations are reviewed.

Bank deposits are the key to the banking industry's success (Mushtaq & Siddiqui, 2017). According to Boadi et. al. (2015), bank deposits can benefit the banking industry both in developed and developing countries. This statement is also parallel to Malaysia's banking industry, where bank deposits are a significant source of funding for banks, and customers from deposits have consistently been the dominant funding source for major credit providers (Bank Negara Malaysia, 2013). As a source of funds, banks rely on depositors' money (Unvan & Yakubu, 2020; Asutay & Othman, 2020), and a significant portion of bank assets are usually supported by customer' deposits (Asutay & Othman, 2020). According to Li and Shaffer (2015), banks may choose to operate with higher levels of financial risk (moral hazard) or utilize reciprocal bank deposits disproportionately, either by choice or by the supply of deposits.

A bank deposit is defined as the amount of money that a customer keeps in his account, in exchange for which the bank pays the customer a specified amount of interest-based on the prevailing rate (Mushtaq & Siddiqui, 2017). Banks aid depositors in gaining some income from their funds that they may not intend to utilize immediately. Banks profit from deposits when they channel the funds to other clients who require borrowing, lending, or financing. The most important condition for

depositors is the bank's interest paid, depending on the total amount of deposits. The factors that influence a bank's financial efficiency are crucial for depositors who want to deposit or withdraw their money (Mushtaq & Siddiqui, 2017).

A typical bank's primary job is to receive deposits and use funds for lending or other profitable activities. For these reasons, conventional banks offer three types of deposit: demand, savings, and time. The demand deposit (current account) is for customers who need money for transaction purposes. That is, individuals who need money for domestic expenses and businesses need money for everyday operations. The savings account is the second deposit option for people who want to save and earn money simultaneously. Savings account holders keep money in savings accounts for both safety and investment purposes. The cautious motive for holding cash refers to the desire to save some money in hand for unexpected events. Time (fixed) deposit is the final form of deposit banks offer to customers who have idle capital and want better returns.

On the other hand, Islamic bank deposits include investment, demand, savings, *Tawarruq*, and negotiable instrument deposits (Solarin et al., 2018). In addition, other deposits in Islamic banking by holders also include household deposits, business deposits, financial institution deposits, federal government deposits, state government deposits, and statutory agency deposits (Ali et al., 2019). Amin (2013) lists the Islamic deposit facilities in Malaysia; current accounts, saving accounts, investment accounts, and negotiable Islamic certificates of deposit (NICD). According to Yusoff and

Wilson, (2005), the bank offers demand and savings deposits with guaranteed custody (*al-wadiah*), as well as investment deposits with profit-sharing (*al-mudarabah*).

Bank deposits have a significant impact on a country's economic success rather than being considered only as a contribution to a country's savings (Mushtaq & Siddiqui, 2017). For both types of banks, whether conventional or Islamic, the deposit facilities vary depending on the bank's policies, marketing initiatives, and business activities. Furthermore, Ali et. al. (2019) discovered that Islamic banks differ from conventional banks in several ways, leading to depositors behaving differently. In principle, an Islamic bank's role is to receive deposits and use some funds for financing or other profit-making activities (Amin, 2013). Thus, the Islamic banking industry is one of the significant sectors in financial services, and it serves as a backbone of any country's economy. Consequently, the government in many countries with dual-banking systems such as Malaysia has introduced and implemented regulatory requirements such as Acts, incentives, schemes, and corporate governance for both types of banks.

2.2 Islamic Bank Deposits -Dependent Variable

Banks act as intermediaries between savings and investors (Unvan & Yakubu, 2020). According to the traditional definition, banks serve as financial intermediaries, collecting deposits from savers and providing loans to consumers, corporations, and governments (Fah & Hassani, 2014). Previous literature has shown that bank deposits play a crucial role in accelerating economic growth, particularly in developing and

emerging economies (Ogege & Shiro, 2013; Ngula, 2012; Orji, 2012). According to Eriemo (2014), the government has periodically directed banks to mobilize new deposits, accelerating the pace of lending from surplus to deficit units in the economy. Eriemo further stated that banks are expected to mobilize financial resources and allocate them to productive ventures. It is impossible to mobilize deposits without understanding the elements that influence them, as Unvan and Yakubu (2020) mentioned.

Although there is vast literature on individuals' savings behavior, research on the determinants of bank deposits is still scanty (Unvan & Yakubu, 2020). Banks deposit determinants are generally classified as micro and macroeconomic factors. While the microeconomic determinants are bank and individual-specific, the macroeconomic factors that drive bank deposit are related to an economy's general macroeconomic fundamentals (Unvan & Yakubu, 2020). The previous literature, as outlined below, have examined the determinants of banks deposits level in different contexts using several factors.

Determinant factors of bank deposits from previous studies, notably are profitability, liquidity, capital adequacy ratio, loan/financing to deposit ratio, gross domestic product, unemployment, interest rates, and inflation (Brown et al., 2020; Ünvan & Yakubu, 2020; Ali et al., 2019; Dincer et al., 2019; Ibrahim & Rizvi, 2018; Solarin et al., 2018; Ferrouhhi, 2017; Mushtaq & Siddiqui, 2017; Boadi et al., 2015; Li & Shaffer, 2015; Eriemo, 2014; Uchino, 2014; Abdul Karim et al., 2013; Hannan & Prager, 2006;). Previous related studies also argued the influence of other factors

such as non-performing loans (Tomi et al., 2020), bank concentration (Ab Rahman et al., 2021; Drechsler et al., 2017; Claessens & Laeven, 2004), and bank size (Winarto et al., 2022; Alebachew Legass et al., 2021; Thao & Thanh, 2021; Ferrouhi, 2017; Kaufman, 2007; Demirgüç-Kunt & Huizinga, 1999). This research introduces new independent variables of the net profit margin, overnight policy rate, application of Section 2 IFSA 2013, and one moderating variable of business enterprises depositors after reasonably reviews the related literatures.

Islamic banks provide value for society by acting as intermediaries between fund providers and fund users. Beneficiaries, such as depositors, investors, bank management, government and regulators, academics, and economists who wish to examine the bank's fiscal conditions and economic health, pay close attention to the Islamic banking sector's performance. Islamic deposits are undoubtedly the core of Islamic banks' operations to provide liquidity, profitability, and stability. Thus, the mobilization of Islamic deposits is critical to the performance of commercial banks.

In conclusion, Islamic banks' deposit performance is the dependent variable for this research, based on the existing literature reviews in this chapter. The empirical study proxy the dependent variable, Islamic banks' deposit performance, by the total amount of Islamic deposits generated from demand deposits, saving deposits, term deposits, special investment deposits, negotiable instruments deposits, and other deposits.

The following subsections discusses the 13 independent variables (eight Islamic bank-specific financial factors; *net profit margin*, *return on assets*, *return on equity*,

non-performing financing, financing-to-deposit ratio, capital adequacy ratio, bank concentration, bank size, four macroeconomic variables; gross domestic product, inflation, unemployment, overnight policy rate, one regulatory variable; Section 2(1) of IFSA 2013, and one moderating variable; customer type - business enterprise depositors.

2.3 Islamic bank-specific financial factors - Independent Variables

Bank-specific financial factors studied as independent variables in this research is divided into two major components which are profitability and liquidity determinants. Under the profitability determinants are the factors of net profit margin, return on assets, return on equity, and non-performing financing. While under the liquidity determinant are the factors of financing-to-deposit ratio, capital adequacy ratio, bank concentration, and bank size. The eight independent variables that determine the deposit performance of Islamic banks are discussed in the following subsections.

2.3.1 Profitability

The relationship between profitability and liquidity creation of deposits is an important aspect to consider in the financial industry. Profitability is a measure of a company's capacity to make profits, which are the financial gains obtained from its operations. On the other hand, liquidity pertains to the degree of ease with which a company's assets may be turned into cash, so ensuring its ability to meet short-term financial

obligations. Additional research certainly is required to examine related variables that might potentially be influenced by profitability and liquidity factors.

According to Fah and Hassani (2014) a bank's profitability and performance outcomes might indicate whether or not investors and depositors should invest or withdraw their funds. According to the authors, bank profitability and performance provide feedback to bank managers in selecting whether to continue or change current operations, repair flaws or pursue opportunities. The results in Fah and Hassani (2014) study indicated positive and significant relationships between the loans, deposits, and banks' profitability. However, the authors analyzed that volatility of loans and deposits does not significantly impact banks' profit-efficiency in Malaysia. The research also revealed that Malaysian conventional banks were more profitable than Islamic banks during the study period. Thus, from the study, the return on assets (ROA) and return on equity (ROE) are significantly different when the result in conventional banks is higher than those in Islamic banks. Previous studies also show that bank profitability is a significant factor determining bank deposits (Unvan & Yakubu, 2020). The primary source of bank profits is the spread between loan interest and deposit return. Both are internal variables. The volume of loans and deposits is found to significantly influence banks' profitability (Unvan & Yakubu, 2020).

Interestingly by reviewing the related literatures in banks' profitability, net profit margin is the most noteworthy independent variable to show the profitability performance of Islamic banks, together with other metrics for profitability, notably the return on assets (ROA) and return on equity (ROE). This research introduces another

significant factor in Islamic banks' profitability that favorably has influenced the volume and volatility of Islamic deposits in Malaysia in 22 years (2000- 2021), which other researchers have not yet discussed comprehensively.

2.3.1.1 Net Profit Margin

Net Profit Margin (NPM) is a component of the profitability ratio, which measures a business's ability to generate a profit. NPM, also known as net income margin or net margin, measures a company's profit as a proportion of its revenues (sales or services). From the financial performance report, NPM can describe the level of efficacy of the bank's management as a financial intermediary. When deciding whether or not to invest their money in a bank, investors and depositors frequently consider NPM, among other factors. NPM is calculated in percentage value by dividing net profits (revenues minus expenditures) to total revenues. For this study, the NPM is calculated manually based on the Islamic accounting perspective from the original data of Islamic banks' financial reports, by dividing net income (profit before extraordinary items, taxes, and zakat) to gross income (total distributable income).

The concept of Net Interest Margin (NIM) in conventional banking is often evaluated in the financial sector by assessing the ratio of net interest revenue to earning assets. A favorable relationship exists between NIM and the level of interest revenue derived from the bank's earning assets. According to Silaban (2017), a higher NIM ratio is often associated with increased profitability, signifies an improvement in the bank's financial performance, and assesses a bank's managerial proficiency in generating interest income. NIM has a net interest component within its ratio; thus,

NIM has the potential to enhance the expansion of bank profitability. Due to the significance of interest income and interest expense, which make up the primary traditional function of banks' major operations and account for a sizable portion of their operating income, NIM is the most frequently used measurement in prior studies (e.g., Hadi et al., 2021; Lamichane, 2019; Silaban, 2017) when assessing a bank's profitability.

The reliance on deposits for financing activities is a significant factor influencing bank profitability. Financial institutions that largely depend on deposits as a primary source of funding often exhibit lower levels of profitability and interest margins in comparison to institutions that rely on other funding sources (Demirguc-Kunt & Huizinga, 1999). This condition may be attributed to deposits needing a greater number of branches, changes in overhead costs, and other related expenditures. These factors contribute to a rise in operating costs, which in turn affects the fluctuations seen in bank profit margins. It is noteworthy to mention that banks have the ability to shift their operational expenses onto both their funders and depositors (Demirguc-Kunt & Huizinga, 1999). The association between NIM and deposits in commercial banks is subject to the effect of several other factors too, including operational expenses, regulatory considerations, and market structure. Moreover, it is crucial to acknowledge that the relationship may differ based on the banks' distinct attributes and internal factors, as well as the external aspects of the banking sector.

Nevertheless, it is essential to note that a substantial portion of banks' revenue is derived from other fees and service charges, which are not accounted for in the NIM

measurement. Therefore, NIM is only part of the NPM from a conventional banking perspective and does not thoroughly explain the company's profitability. Moreover, NIM is not applicable in Islamic banks operational as interest is prohibited by the Shariah governance. Thus, this research is not using NIM as one of the profitability variables in the study. Accordingly, NPM is the most noteworthy independent variable to show the profitability performance of Islamic banks, together with other metrics for profitability, notably the return on assets (ROA) and return on equity (ROE).

Prior research has shown that the likelihood of attracting Islamic deposits is higher for profitable banks (Bougatef & Korbi, 2018; Hasan & Dridi, 2011; ;Hassan et al., 2009; L.isnawati & Novianty, 2022). Islamic banks adhere to specific concepts and practices that set them apart from conventional banks, exerting an effect on their profitability and NPM. According to the findings of Hasan and Dridi (2011), the impact of the global financial crisis varied between Islamic banks and conventional banks. The business model of Islamic banks had a significant role in mitigating the adverse effects on profitability during the financial crisis 2008. Conversely, inadequate risk management practices resulted in a more substantial decrease in profitability for Islamic banks in 2009 compared to conventional banks (Hasan & Dridi, 2011). These imply that the profitability performance may influence the funding process; like the deposit levels acquired by Islamic banks. The aforementioned circumstances suggest that the any part of financing process, such as the acquisition of deposit levels by Islamic banks, may be influenced by the profitability performance.

Bougatef and Korbi (2018) argue that the NPM of Islamic banks may be primarily attributed to factors such as risk aversion, inefficiency, diversification, and economic circumstances. The distinguishing characteristic of Islamic financial intermediation is its reliance on profit-and-loss sharing, which strengthens the bonds of solidarity and fraternity among partners. Hence, it is possible for the bank margin and its underlying factors to exhibit variations between Islamic and conventional banks. Islamic banks have distinct financing approaches in contrast with conventional banks. According to Lisnawati and Novianty (2022), Islamic banks use profit-sharing mechanisms, such as mudharabah contracts, to gather deposit money, as opposed to using fixed interest rates. The utilization of deposited money and the distribution of profits is influenced by the characteristics of profit and loss contracts and the dynamics relationship between Islamic banks and depositors in accordance with Shariah principles. Hassan et al. (2009) researched the comparative efficiency of conventional and Islamic banks concerning cost, revenue, and profit. The results indicated no statistically significant disparities in overall operational effectiveness between conventional and Islamic banks. Hassan et al. (2009) observed that, on average, banks exhibited greater efficiency in resource utilization relative to their capacity for generating revenues and profits. This observation implies a favorable relationship exist between NPM and Islamic deposits.

In conclusion, the relationship between profitability and liquidity of deposits may vary across different contexts, such as the type of banks and banks' governance. Deposits have a crucial role and possess a substantial explanatory capacity in clarifying the factors influencing profitability (Lamichane, 2019). Most past studies concentrated

on how deposits affected bank profitability, paying little attention to the fact that profitability may also affect the deposits' liquidity creation. This research introduces the profitability factor, namely the net profit margin (NPM), to determine the relationship between the NPM and Islamic deposits. This new relationship study is needed to understand the empirical relevance with related theories and test the hypothesis's significance. Comprehending these interconnections is vital for formulating well-informed judgments inside the financial sector.

Therefore, the following hypothesis is formed:

H₁. Net profit margin is positively associated with Islamic bank deposits.

2.3.1.2 Return on Assets

Profitability is the most acceptable metric for measuring a bank's success (Silaban, 2017). Return on assets (ROA) and return on equity (ROE) is regularly used profitability measurements in the banking business. ROA focuses on the company's capacity to produce profits via its operations. ROA is a financial indicator that calculates net income earned relative to total assets to determine a company's profitability. It is an essential measure of a company's efficiency in generating profits from its assets. However, previous researchers have paid little attention to the association between ROA and commercial bank deposits.

According to the research conducted by Demircug-Kunt and Huizinga (1999), it was shown banks that largely depend on deposits as a source of financing tend to

exhibit lower levels of profitability. The authors propose that the association between ROA and deposits may be influenced by the regulation of deposit insurance and the overall financial structure of a country. Recent research conducted by Ebimobowei and Felix (2023) revealed a statistically significant and favorable correlation between customer deposits and ROA. This suggests that a relationship may exist between ROA and bank deposits, since an increase in customer deposits might potentially result in enhanced profitability for deposit money banks.

Previous research has examined the indirect influences of ROA on Islamic deposits by comparing the performance of Islamic banks and conventional banks throughout different time periods and under diverse conditions. In a recent study conducted by Alamsyah and MN (2022), revealed observable disparities in the financial performance of conventional banks and Islamic banks, as measured by the ROA ratio. However, the examination did not directly analyze the correlation between ROA and Islamic deposits. Research conducted by Fadhillah and Tohirin (2021) aimed to compare the financial performance of mudharabah deposits and equity investments within the Islamic banking sector. The objective of the research was to evaluate the equitable allocation of returns among depositors and stockholders. Furthermore, Yudhistira Ardana et. al. (2021) reported that ROA has an impact on mudharabah deposits. Although the present analysis does not explicitly examine the correlation between ROA and Islamic deposits, it offers valuable perspectives on the performance and profitability of Islamic banks with respect to bank deposits.

In summary, the existing literature does not comprehensively explore the relationship between ROA and Islamic deposits. Nevertheless, the existing research indicates that the deposits inside the Islamic banking sector may impact the performance and profitability of Islamic banks. Additional study is required to conduct a focused analysis of the relationship between ROA and Islamic deposits and examine the impact of Islamic banks' profitability on their deposit operations. Comprehensive knowledge of the relationship between various profitability elements may assist banks and authorities in making significant choices to enhance the profitability aspects that may impact the liquidity generation of Islamic bank deposits.

Therefore, the following hypothesis is formed:

H₂. Return on assets is positively associated with Islamic bank deposits.

2.3.1.3 Return on Equity

The measurement of profitability offers a distinct perspective, with return on assets (ROA) providing insight into a bank's operational performance from the bank's standpoint and return on equity (ROE) reflecting the viewpoint of shareholders. It is important to note that the levels of ROE can be influenced by a bank's capital strategy (Halamka & Teplý, 2017). ROE is a key financial metric utilized to evaluate an organization's profitability and efficacy in generating returns on its shareholders' equity. In the context of banking operations, the ROE metric may be seen as a viable indicator of profitability. Increased profitability has the potential to mitigate default risk, hence allowing banks to establish a reduced deposit rate. According to Martinez

Peria and Schmukler (2001), there exists a potential negative correlation between a higher ROE and deposit rates. Fève et. al. (2021) proposes the assumption that the cost of acquiring equity is higher compared to generating deposits. This is mostly due to the fact that deposits provide a liquidity service to customers.

In the context of commercial banks, ROE serves a significant role as a reflection of the bank's capacity to earn profits from the money that has been invested by its shareholders. The configuration of a banks' assets and liabilities also has an impact on its ROE. According to the study conducted by Kandil and Markovski (2019), it was seen that the decline in oil prices in the middle of 2014 had a notable adverse effect on four key financial indicators within the banking industry. These indicators include ROA, ROE, the level of loans, and the level of deposits, and demonstrates conventional banks had a greater ability to withstand the adverse effects of economic slowdown compared to Islamic banks. Cy et. al. (2018) reported the Nigerian deposit money banks enhanced the financial performance in terms of ROA, ROE, and profit margin over a span of ten years (2008-2017).

Previous studies identify a suitable measurement in assessing the operational performance of Islamic banks (Mifrahi & Fakhrunnas, 2018). The financial performance of Islamic banking is evaluated using two profitability ratios: ROA and ROE. The calculation of ROA is the profit before tax divides by the total assets of Islamic banks, while ROE is determined the profit after tax divides by the entire equity of Islamic banks (Munifatussa'idah, 2021; Masood & Ashraf, 2012). Meslier et. al. (2017) used the bank's ROE as a proxy measure for profit and loss sharing and

hypothesized a positive association between the ROE and the returns received by investment account holders in Islamic banks. Furthermore, Altinay et. al. (2022) conducted research that underscored the distinctiveness of measuring the financial performance of Islamic banks compared to conventional banks. However, the authors used ROE as a financial metric for Islamic banks, asserting that the modified model was appropriate for the context of Islamic banking.

Renfiana (2022) discovered the profit-sharing rate associated with *mudharabah* deposits which favors the volume of deposits maintained by Islamic commercial banks. Consequently, Renfiana (2022) proposed that consumers are motivated to allocate their money to Islamic banks to pursue profit. The study by Maryam (2022) revealed that the ROE significantly impacts Islamic banks' profit-sharing mechanism. This finding aligns with the earlier research conducted by Dwijayanti (2016), which also shows that the profit distribution in *mudharabah* deposit products is strongly impacted by the ROE. Therefore, the correlation between ROE and Islamic bank deposits may be analyzed by evaluating Islamic banks' financial performance and capacity to attract deposits.

In brief, ROE is a crucial financial metric for evaluating the profitability of Islamic banks. The correlation between ROE and deposits in Islamic banks is subject to several variables, including the banks' financial performance, capacity to attract deposits through financing operations, and revenue efficiency. Islamic banks' distinctive business strategy and risk management practices may enhance their ability to sustain a favorable ROE and attract deposits. Thus, concerning the efficacy, based

on the reviews of previous research, this study contends that Islamic banks have potentially shown the capacity to provide greater ROE via their revenue-generating endeavors, hence potentially fostering increased deposit inflows.

Therefore, the following hypothesis is formed:

H₃. Return on equity is positively associated with Islamic bank deposits.

2.3.2 Liquidity

In the Islamic banking industry, sources of funds play a significant role in meeting the liquidity needs of Islamic banks (Amin, 2013). As previously stated, the primary role of a bank is to accept customer deposits. The bank considers these deposits to be liabilities, whereas the customers consider them to be assets. Thus, Islamic banks must maintain a sufficient amount of deposits to ensure the long-term viability of their operations. Consequently, Islamic banks' function in creating sources of funds (deposit creation and expansion) appears to be critical in today's banking industry. This is most likely due to Islamic banks' perception of deposits as a more cost-effective source of capital (Amin, 2013). Nevertheless, Dia, 2013 also indicated that bank deposits are still an unstable source of funds and represent a crucial tool to reduce liquidity risk.

Deposits are the part of proceeds placed in banks, and as the primary source of a bank's liquidity (Ferrouhhi, 2017). Previous studies show that liquidity ratio is a significant factor determining bank deposits (Ferrouhhi, 2017; Unvan & Yakubu, 2020). Liquidity creation is a fundamental function of the banking system, as banks create liquidity by issuing liquid deposits backed by illiquid loans (Dia, 2013).

Diamond and Rajan (2001a, b) and Song and Thakor (2007) proposed that banks can fund illiquid investment projects only by issuing demand deposits or core deposits.

With the significant growth in Islamic bank deposits over the last decade, liquidity management has become increasingly crucial in Islamic finance. The ongoing needs and challenges in managing liquidity and asset-liability maturity mismatches have inspired numerous initiatives to improve the Islamic liquidity management framework. It is imperative to study further the relationship between banks' liquidity and the Islamic banks' deposit performance in this country. The findings could shed light as to how the Islamic bank's liquidity in Malaysia affects/determines the performance of banking deposits. The liquidity elements discussed in the following subsection includes capital adequacy ratio, bank concentration, financing to deposit ratio, and bank size (total assets).

2.3.2.1 Capital Adequacy Ratio

The capital adequacy ratio (CAR) assesses a bank's available capital as a %age of risk-weighted credit exposures. It is also known as the capital-to-risk weighted assets ratio. It protects depositors and promotes financial system stability and efficiency. There are two categories of capital measured: tier-1 capital, which can absorb losses without forcing a bank to suspend operating, and tier-2 capital, which can absorb losses but less protect depositors.

One of the purposes of this research is to examine the influence of CAR prescribed in Basel III. CAR is one of Basel III's updated essential pillars due to Basel

II's limitations and ineffectiveness in addressing excessive risk-taking. Basel III Accord came into effect with considerable stringency to leave no possibility for deficiencies, which would lead to repeating the blemishes of the preceding accords. As Harkati, et.al., (2020) stated, the primary purpose of Basel III was to ensure that banks were on standby to counteract any crisis by increasing bank liquidity and decreasing leverage (i.e., more debt than equity).

Within the context of Malaysia, Basel III implementation commenced in January 2013. During this process, the designed framework placed stress on three fundamental pillars: capital requirements/capital buffers, liquidity, and leverage until the deadline of 2019. The imposed regulations touched the capital ratio as the minimum tier 1 was elevated from 4% (Basel II) to 6%, common equity tier 1 was elevated to 4.5% compared to 2% in Basel II, and minimum capital was not changed and remained at 8%. Furthermore, banks must keep a conservation buffer of 2.5% above and beyond the statutory minimum. In addition to the conservation buffer, BNM regarded a capital buffer of 0% to 2.5% (as risk-weighted assets of common equity) as a countercyclical capital per Basel III. The elevated capital requirements were scheduled for 2013–2015, while the conservation buffer was scheduled for 2016–2019 (BNM, 2013). BNM reported that a financial institution must hold and constantly keep the requirements of minimum capital adequacy ratios. In 2018, BNM had set up an increment of the capital conservation buffer by 1.875% (from 8% to 9.875%) of the total CAR; then, it shall be 2.5% as of 2019 (Bank Negara Malaysia, 2020). According to Capital Adequacy Framework for Islamic Banks (Capital Components), the numerator of CAR for Islamic banks is the sum of Tier 1 and Tier 2.

CAR is a proportion of risk-weighted credit exposures. A different name for this metric is the capital-to-risk weighted assets ratio. It safeguards depositors and enhances financial system performance. Tier-1 CAR can absorb losses without halting the bank's operations, but tier-2 CAR is able to absorb losses but protects depositors less. A bank's capital ratio may determine the ability to create liquidity. With that said, Gorton and Winton (2017) showed that increased capital ratios would reduce the output of liquidity through crowding out deposits. In the context of investors, deposits serve as a more effective liquidity buffer than equity capital investments. Increasing capital ratios encourages depositors to shift their money into the bank's equity rather than entirely leaving it. A higher capital ratio reduces investors' liquidity since bank equity is illiquid while deposit accounts are very liquid (Berger & Bouwman, 2007). There is a need for a more profound comprehension of how different capitalization levels affect the availability of funds in banks, and a better understanding of the implications of bank capital ratios on liquidity creation is required (Berger & Sedunov, 2017).

Banks with substantial capital tend to have higher levels of deposits and demonstrate greater liquidity. This is due to the fact that banks with greater capital ratios have lower financing costs, enabling them to draw in more deposits (Demirgüç-Kunt & Huizinga, 1999). The CAR is an important indicator used to assess the financial liquidity and stability of a bank. The financial performance of a bank is greatly influenced by liquidity management, which also serves as a critical factor in safeguarding the stability of the banking system. This is achieved via the minimization of possible losses and the mitigation of the risk associated with bank failures (Ikue et

al., 2022;Tami & Riska Kumala Dewi, 2022). According to Tami & Riska Kumala Dewi, (2022). A higher CAR signifies a more robust financial standing and a reduced likelihood of bankruptcy. The calculation of CAR involves the division of total capital, including both equity and reserves, by its risk-weighted assets.

Previous research has shown that bank deposits have a significant impact on the calculation of the CAR. Deposits play a significant role in providing liquidity resources to banks, and the generation of deposits directly impacts the bank's capacity to fulfil its capital obligations (Merton, 1977) Nevertheless, there are many elements that might potentially impact the relationship between bank deposits and the CAR. For instance, the availability of deposit insurance, which protects bank deposits and offers a certain degree of security for depositors, is a factor that might potentially impact the CAR. Deposit insurance has the potential to mitigate the occurrence of bank runs and enhance depositor trust, hence exerting a favorable influence on the CAR (Merton, 1977). Conversely, the size of bank deposits may also have an influence on the CAR. According to Mursal et. al. (2019) there is a negative correlation between the magnitude of deposits and CAR in banks, and the relationship signifies the bank's risk exposure by frequently engaging in more high-risk activities and bigger loan portfolios.

Moreover, CAR may also be subject to the impact of the composition of bank deposits. Previous research has shown a negative correlation between the CAR and the proportion of deposits (Bateni et al., 2014). This implies that banks with a lower CAR may own a more significant share of deposits, which might signify an elevated risk

level (Bateni et al., 2014). The relationship between the CAR and bank deposits is complex. Many factors, including deposit insurance, the size of the bank, and the structure of deposits, may impact the relationship. Deposit insurance ensures stability and instills trust in the banking system. However, it is essential to recognize that the amount and composition of deposits may significantly influence a bank's risk profile and capacity to maintain the CAR. Banks must guarantee the presence of sufficient capital to sustain their operations and prudently oversee their deposit portfolio effectively. Therefore, more examination is required to comprehend this association comprehensively, which may provide valuable insights into the correlation between the CAR and bank deposits.

Several studies have examined the correlation between the CAR and Islamic deposits. Nevertheless, it is essential to acknowledge that the precise correlation between these variables may change depending on the conditions and the specific elements evaluated in each study. Research conducted by Rahman and Banna (2016) indicates that CAR has a positive and statistically significant relationship in conventional banks, but it is deemed unimportant in Islamic banks. This observation implies that the correlation between the CAR and Islamic deposits may reveal variations according to the types of banks. Moreover, Junjuna et al. (2022) showed a notable disparity of CAR between Islamic banking and conventional banking, indicating potential differences in the association between CAR and Islamic deposits during the global COVID-19 epidemic.

The relationship between CAR and Islamic deposits is still indeterminate in previous studies because of the potential effect of several elements, including regulatory frameworks, risk management practices, and the unique attributes of Islamic banking. Hence, further study is needed to examine this association more precisely. As mentioned earlier, it is crucial to acknowledge that the study conducted by prior researchers offers valuable perspectives on the correlation between the CAR and bank deposits. However, it does not precisely examine the precise association between these two variables within the study being referred.

Therefore, the following hypothesis is formed:

H4. Capital adequacy ratio is negatively associated with Islamic bank deposits.

2.3.2.2 Bank Concentration - Herfindahl-Hirschman Index (HHI)

The Herfindahl-Hirschman Index (HHI) is a frequently used metric for assessing market concentration, which is calculated based on the market share of individual firms (Tanusondjaja et al., 2021). In other words, the HHI is employed to investigate the degree of ownership concentration of a market share, which is related to the influence of firm competition in market structure (Sijabat et. al., 2020; Huang et al., 2014; Laeven & Claessens, 2004). A higher HHI reflects a more concentrated market with a smaller number of competitors, whereas a lower HHI signifies a more competitive market with a greater number of competitors (Berger & Humphrey, 1997; Pahlevi & Ruslan, 2019). In the context of deposits market concentration, the HHI is measured by squaring the total deposits of each bank competing in the market and then

summing the resulting numbers (Ali et. al., 2020; Kamran et al., 2019; Maji & Hazarika, 2018). Thus, the measurement of HHI based on the total bank deposits is considered as a liquidity proxy for the level of bank concentration.

In the context of the financial industry, HHI is widely used to evaluate the market concentration of banks and the degree of competition in the banking sector (Xia et al., 2021). Berger and Humphrey (1997) reported that banks with a higher HHI in a more concentrated market may have greater pricing power and may be better able to keep existing depositors and to draw in new depositors. Contrarywise, the authors also suggest for banks with a lower HHI in a more competitive market, may offering more attractive deposit products and services to attract customers. Furthermore, Drechsler et. al. (2017) discovered a connection between bank behaviors during monetary policy changes and deposit-market concentration, by utilizing the HHI measurement. The authors argue that banks often increase the spreads charged on deposits in highly concentrated markets, which gradually causes depositors to leave the banking system. This result suggests that a higher HHI indicates higher concentration, may result in lower deposit levels.

Moreover, Laeven and Claessens (2004) contend that greater competition in the banking sector is facilitated by foreign bank entry and by reducing relevant restrictions in activities can lead to increament of deposit levels. This finding indicates that higher deposit levels may be related to more intense market competition, as a lower HHI shows. On the other hand, research by Pahlevi and Ruslan (2019) has shown that a higher HHI in the banking industry is linked to a monopolistic structure and may have a detrimental effect on bank performance. Therefore, both conditions

of HHI, whether a high or low concentration level, could result in higher deposit levels for banks as a financial intermediary depending on the liquidity management strategies each bank decides. Hence, banks' conditional strategies in market concentrations could potentially result in higher deposit levels as customers have more options.

In the context of Islamic banking, Ab Rahman et. al. (2021) found that bank concentration had a positive and statistically significant impact on Islamic bank deposits, indicating that factors related to bank performance and market structure can affect the magnitude of Islamic deposits. Furthermore, Setyawan et. al. (2022) measured the HHI for concentrated banking market share, indicating a monopolistic market structure. The researchers also discovered a statistically significant favorable impact of market concentration on the performance of banks. This discovery implies that an increased concentration of resources may be linked to enhanced bank performance, possibly fostering more deposit inflows.

The investigation conducted by Kalim and Arshed (2018) examined the dynamics of demand and supply in the context of Islamic banking deposits. The researchers concluded that the worldwide market for Islamic banking deposits exhibits stability and convergence. Consequently, banks must prioritize pricing strategies and establish effective measures to attract deposits. According to the study conducted by Basri (2020), it was determined that the Malaysian Islamic banking business operates under a market structure characterized by monopolistic competition, exhibiting a moderate level of market concentration. Hence, based on the research mentioned earlier, it can be inferred that the degree of concentration shown by banks in the deposit

market structure might potentially have a favorable outcome regarding Islamic deposit levels.

It is important to note that the relationship between market concentration, as measured by the HHI, and bank deposits is complex and can be influenced by factors such as regulatory policies, customer preferences, and economic conditions. Bank internal factors such as revenue diversification and profitability can also play a role in attracting deposits. A higher HHI in a more concentrated market may suggest a less competitive market with higher deposit levels due to market power. A lower HHI may indicate a more competitive market with potentially higher deposit levels due to increased customer options and competition among banks. In brief, while there is limited direct research on the relationship between the HHI and Islamic bank deposits, the HHI can provide insights into the competitive landscape of the banking industry, which can indirectly impact deposit levels. Therefore, it is necessary to conduct further research explicitly focusing on the relationship between the HHI and Islamic deposits as it is needed to provide more conclusive evidence.

Therefore, the following hypothesis is formed:

H₅. Bank concentration is positively associated with Islamic bank deposits.

2.3.2.3 Financing to Deposit Ratio

Financing to Deposit Ratio (FDR) terminology is favored by Islamic banks in order to fulfil Shariah compliance requirements. The optimization of finance distribution, or FDR, performs a comparable role to the Loan to Deposit Ratio (LDR) used in conventional banking. FDR represents the liquidity level of a bank (Nanda, 2020). Measurement of FDR is employed to measure the banks' liquidity composition based on the ratio of total Shariah financing divided by the amount of Islamic deposit funds collected from customers (Nugroho et. al. 2021; Munir, 2018; Aswan et al., 2017; Riyadi & Yulianto, 2014).

In the context of conventional counterpart, LDR aims to measure a bank's liquidity via a comparison of total loans to total deposits over the period (Demirguc-Kunt & Huizinga, 1999). The LDR is quantified by a numerical value expressed as a percentage. In the event that the ratio exceeds a certain threshold, the bank may have difficulties maintaining sufficient liquidity to address unforeseen funding requirements. However, in the event that the ratio is too low, it is possible that the bank's profitability may not be optimized. The LDR serves as a crucial metric for assessing a bank's fiscal well-being and vulnerability to risk. A higher LDR signifies that a financial institution is placing a greater reliance on funds borrowed, such as interbank borrowing or issuing debt, to finance its lending activities. On the other hand, a lower LDR suggests that a bank has a higher level of customer deposits relative to its loans, indicating a more stable funding base. According to Demirguc-Kunt and Huizinga (1999), the level of bank deposits can impact the LDR. When bank deposits

increase, it provides more funds for the bank to lend, potentially leading to a higher LDR. Conversely, a decrease in bank deposits can limit the bank's lending capacity and result in a lower LDR.

The FDR is a metric used to assess the degree to which an Islamic financial institution depends on external sources of funding to support the financing operations in proportion to its deposit base (Hasan & Dridi, 2011). A greater FDR implies that a bank is placing more reliance on external sources of funding, such as borrowing or debt issuance, while a lower ratio signifies a bigger proportion of customer deposits in relation to external financing. According to Renfiana (2022) a positive relationship exists between the amount of funds allocated by Islamic banks for financing purposes and their capacity to generate revenue, ultimately resulting in bigger profitability. This result suggests that the FDR might potentially impact the financial performance of Islamic banks. Moreover, the study conducted by Yudiansyah et. al. (2022) revealed that the FDR had a noteworthy and favorable impact on the distribution of funds by Islamic banks towards the sector of micro, small, and medium businesses. This discovery suggests that a greater FDR might potentially result in a rise in company funding. According to Dermawan et. al. 2021) the FDR positively impacts the growth of assets inside Islamic banks. The authors propose that an increased FDR might potentially facilitate banks' asset expansion.

Islamic deposits are depositor's funds that are placed in Islamic banks, which adhere to the rules of Shariah Law which forbid the giving or receiving of interest, also known as *riba* (Hasan & Dridi, 2011). Islamic banks provide a range of deposit

instruments that adhere to the principles of Islamic finance, including profit-sharing investment accounts and Islamic savings accounts. Several factors might potentially impact the connection between the FDR and Islamic deposits. One significant determinant is the business model used by Islamic banks, which strongly emphasizes profit-sharing and risk-sharing agreements (Hasan & Dridi, 2011). Islamic banks often exhibit a greater reliance on equity-based financing, hence potentially influencing the FDR. Equity-based financing may lead to a reduced FDR compared to conventional banks that mostly depend on debt-based funding.

Without a doubt, sustaining long-term economic development in an economy is contingent upon stimulating its financial operations. This observation is supported by previous studies showing a significant correlation between banks' financing activities and economic development (Muhammad Yasir Saeed et al., 2020). Hence, it is imperative to analyze and examine the correlation between the FDR and Islamic bank deposits, as this relationship may serve as a crucial means of evaluating a bank's liquidity and financial well-being. To date, a scarcity of research establishes a direct connection between the FDR and Islamic bank deposits. Examining Islamic banks' financial health and resilience is essential for comprehending the relationship between the FDR and Islamic deposits.

Therefore, the following hypothesis is formed:

H₆. Financing to deposit ratio is negatively associated with Islamic bank deposits.

2.3.1.4 Non-performing Financing

The calculation of non-performing financing (NPF) involves assessing the ratio between NPF and the total amount of financing or loans that have been disbursed. Banks are inclined to assume risk while disbursing financing or extending credit. High level of NPF is a potential threat as it signifies the level of risk associated with financing encountered by banks. Financing risk refers to the assessment of a bank's capacity to effectively handle financial challenges that are specifically targeted at the Islamic bank. In general, banks operate more effectively when the NPF ratio is low than when it is high (Lisnawati & Novianty, 2022). NPF and Islamic deposits are two significant components within Islamic banking sector. NPF is the phrase used to describe finance supplied by Islamic banks that is not being returned in accordance with the agreed-upon conditions, while Islamic deposit is the term used to describe money that customers deposit in Islamic banks. Both of these elements serve as crucial indicators of a bank's financing portfolio quality and have been extensively studied and analyzed in academic research. Moreover, NPF and Islamic deposits substantially affects the bank's liquidity and stability.

The role of bank deposits is of utmost importance in facilitating the operations of the conventional banking system. Deposits serve as a reliable and consistent means of financial support for banks, facilitating their ability to provide loans to both corporate entities and individuals. Nevertheless, the structure of bank funding may also have an impact on the level of risk and return that a bank experiences. An illustration of this may be seen in the negative impact of relying on non-deposit, wholesale funding can decrease the rate of return on assets and an increase in the fragility of banks

(Demirguc-Kunt & Huizinga, 2009). Hence, it is essential for banks to diligently oversee their funding methods in order to maintain a harmonious equilibrium between risk and return. Islamic deposits, akin to their conventional counterparts, have significant importance in the financing activities of Islamic financial institutions. Islamic deposits are structured in accordance with the principles of Shariah, which explicitly forbid the payment or receipt of interest. Thus, Islamic deposits adhere to profit-sharing or loss-bearing principles, whereby depositors participate in the gains or losses created by the bank's operations. Additionally, Islamic deposits serve as a reliable means of funding for Islamic banks, allowing them to provide financing that aligns with the principles of Shariah (Widarjono & Rudatin, 2021).

According to Silaban (2017), non-performing loans (NPL) may be characterized as credits of lower quality, exhibiting uncertainty and resulting in financial loss, as seen within the framework of the conventional banking system. NPL are either in default or approaching default, as Kumar et. al. (2020) stated. NPL and bank deposits are two crucial components within the banking industry that are significant for the financial liquidity and stability. The failure of borrowers to fulfill their loan repayment obligations may result in adverse effects on banks, impacting the financial performance and the quality of the assets (Tomi et al., 2020). Higher levels of NPL might serve as indicators of banks' vulnerabilities within the banking system and provide potential hazards to the overall stability of the financial sector (Kumar et. al., 2020). According to Dorji (2023) the impact of NPL may be influenced by bank-specific variables, including credit growth, deposit rates, return on equity, and capital adequacy ratio. Furthermore, the research conducted by Tomi et. al. (2020) revealed

that NPL might detrimentally affect the operational efficiency and financial performance of deposit-taking institutions.

The potential consequences of NPL for banks and the whole economy may be substantial. Higher levels of NPL can undermine banks' financial viability and capital sufficiency, constraining their capacity to provide credit and facilitate economic expansion (Tomi et. al., 2020). NPL may also decrease stock values, as they serve as indicators of subpar credit quality and diminished anticipated profitability for banks (Parapat et al., 2022). Furthermore, NPL may have significant complications for monetary policy and prudential supervision due to their potential impact on banks' risk-taking tendencies (Rajan, 2005).

With financial stability and risk management implications, NPF and Islamic deposits are significant components of Islamic banking. As Widarjono et. al. (2020) defined, NPF pertains to financing contracts either in default or nearing default. The failure of borrowers to meet their financial commitments may have adverse effects on Islamic banks, leading to a decline in liquidity and a deterioration in asset quality. Furthermore, Widarjono et. al. (2020) stated that higher levels of NPF might signify vulnerabilities within the Islamic banking system and provide potential hazards to the overall stability of the financial sector. Several scholarly research has been conducted to explore the determinants that impact NPF in Islamic banking. One study conducted by Nugroho et. al. (2020) posits that the Islamic banks' efficiency might be influenced by the quality of financing and the quantity of NPF. In a recent scholarly study conducted by Saputri and Ahmadi (2022) the researchers explored the effects of

financing distribution on NPF within the context of Islamic banks. The research revealed that the allocation of profit-sharing financing and murabahah financing might influence the NPF percentage of Islamic banks. This underscores the need to effectively manage the distribution of funds to avoid the potential risks associated with non-performing lending.

A multitude of circumstances may impact the determination of the NPF levels in Islamic banks. Widarjono et. al. (2020) discovered that a considerable rise in the adoption of profit and loss sharing contracts is related with a greater financing risk. The research also revealed that major Islamic banks have a greater incidence of NPF resulting from PLS contracts in comparison to smaller Islamic banks. Furthermore, Fakhrunnas et. al. (2022) suggests that the performance of NPF in Islamic banks was affected by the COVID-19 epidemic.

In summary, NPF and Islamic deposits are significant components of Islamic banking, carrying consequences for the stability of financial systems, risk mitigation strategies, and the general well-being of the economy. Higher levels of NPF might serve as indicators of vulnerabilities within the Islamic banking system, presenting potential hazards to the overall stability of the financial sector. The relationship between the prevalence of PLS contracts and the scale of Islamic banks has the potential to impact the extent of NPF. Islamic deposits serve as a reliable means of funding for Islamic banks, but the performance of the financing portfolio may influence the appeal of these deposits. In order to uphold depositor faith and sustain the stability of their deposit base, Islamic banks must exercise meticulous management

of their financing risk and funding techniques. The effective administration of NPF and the magnitude of Islamic deposits play a pivotal role in ensuring Islamic banks' stability and operational efficacy. The appropriate management of NPF and maintaining a balanced and sustainable level of Islamic deposits are crucial for Islamic banks. These measures are necessary to limit risks and maintain the confidence of customers. Therefore, the abovementioned conditions suggest that the profitability performance has the potential to impact the financing process, such as the effect of the NPF and the acquisition of deposit levels by Islamic banks.

Therefore, the following hypothesis is formed:

H7. Non-performing financing is positively associated with Islamic bank deposits.

2.3.1.5 Bank Size (Total Assets)

Larger deposit-taking financial institutions often play a significant role in augmenting deposit accumulation and capitalizing the economies of scale. Deposit collection is a critical competency for the bank to perform its intermediary role effectively. Banks use deposits as a means to provide liquidity and facilitate the conversion of assets via investment in illiquid loans. The availability of funds for loans or financing will be impacted by how volatile a bank's deposits are and how cautiously the bank manages its liquid assets. According to George (2015) there are notable distinctions in the operational practices of larger banks compared to smaller banks. By leveraging their

scale and expertise, larger banks effectively can optimize the conversion of deposits into loans or financing compared to their smaller counterparts.

The size of a bank can have a positive impact on its deposit levels (Winarto et al. 2022; Alebachew Legass et al., 2021; Thao & Thanh, 2021; Ferrouhi, 2017; Kaufman 2007; Demirguc-Kunt & Huizinga, 1999). A favorable correlation between bank size and deposits has been explored in a number of previous research. Kaufman (2007) asserts that smaller banks can generate a proportionally higher increase in deposit growth than larger banks. In this manner, it could be advantageous if smaller size banks experience more remarkable growth in deposit, which is greater than the bigger size banks. According to Demirgic-Kunt and Huizinga (1999), larger banks have a higher deposit level since they often have a broader customer base and more extensive branch networks, allowing them to attract more deposits. The comprehensive scope and more expansive branch network of larger banks facilitate the mobilization of a greater volume of deposits than smaller banks (Thao & Thanh, 2021). Alebachew Legass et. al. (2021) suggest that deposits' quantity, diversity, and distribution vary by type and bank size. However, the study conducted by Mourouzidou Damsa et. al. (2019) reveals a negative correlation between the size of banks and the amount of deposits they hold. This finding aligns with the research conducted by Laeven et. al. (2016) which indicates that larger banks tend to favor a decrease in deposits and an increase in wholesale financing.

The size of a bank is a significant factor when considering scientific and applied phenomena within the context of Islamic banking (Altameemi & Al-Slehat,

2022). Ibrahim and Rizvi (2017) opine that larger Islamic banks provide more advantages in risk mitigation and financial stability than their smaller counterparts. Previous studies reported that an Islamic bank's size could impact its deposit levels (Altameemi & Al-Slehat, 2022; Widarjono & Sidiq, 2022). The authors suggest that larger Islamic banks may be more capable of providing credit facilities by attracting more deposits. The researchers measured the size of an Islamic bank by using the natural logarithm of the aggregate assets, in which the absolute number of assets is reduced to a value compatible with the ratio value of the elements in the regression model.

A positive relationship exists between a bank's size and liquidity, as shown by Bista and Basnet (2020) and Tasnova (2022) studies. In a study conducted by Bhati et. al. (2019), a noteworthy inverse correlation was discovered between size, as measured by the logarithm of total assets, and liquidity. According to Pham et. al. (2021) it may be reasonably anticipated that monetary policy has a more pronounced impact on smaller banks due to their limited access to capital markets and reliance on deposits. Furthermore, it has been shown that smaller banks have a higher propensity to generate liquidity on their balance sheets (Berger & Bouwman, 2007). Therefore, monetary policy's effect on off-balance sheet activity is often overshadowed by how monetary policy effects on-balance-sheet operations. On the contrary, since larger banks are associated with a higher likelihood of generating more liquidity via off-balance sheet activities; consequently, potential good effect on-balance sheet activities may be overshadowed by the uncertain influence of monetary policy on off-balance sheet activities.

In conclusion, by reviewing the abovementioned literature, bank size may have affected the deposit level in Islamic banks favorably and further impacted the liquidity creation of Islamic banks.

Therefore, the following hypothesis is formed:

H₈. Bank size is positively associated with Islamic bank deposits.

2.4 Macroeconomic Factors - Independent Variables

. This subsection reviews the related literature regarding the independent variables of gross domestic product, inflation rate, unemployment rate and the overnight policy rate as the macroeconomic factors. For each factor, the discussion is based on the findings from past studies on the examination of the relationship between the selected macroeconomic factors with the bank deposits.

2.4.1 Gross Domestic Product

The significant macroeconomic factor is gross domestic product (GDP), which measures the size and performance of an economy. GDP and bank deposits are two important factors in understanding a country's economic and financial landscape. Previous researchers have examined the relationship between GDP and bank deposits, shedding light on the factors that influence deposit levels and the impact of economic growth on the banking sector. Research by Berger and Sedunov (2017) reported that GDP has a positive association with bank liquidity creation. Sekmen (2021) showed a long-run relationship between Islamic deposits, conventional deposits, and economic

development. The empirical analysis by Boadi et. al. (2015) demonstrated that the independent variable of GDP was significant with the dependent variable of long-term deposits after surveyed market reforms from 1986 to 2003. Furthermore, Rajan and Zingales (1996) examined the relationship between financial dependence and growth and found that financial development, including bank deposits, is positively associated with economic growth. These findings from past studies suggest that as GDP increases, there is a potential for higher bank deposits, reflecting the growth and expansion of the economy.

Moreover, it is worth noting that the relationship between GDP and bank deposits may vary across different countries. The research conducted by Asiamah et. al. (2023) focused on the banking sector in Ghana. It revealed a significant positive long-term cointegration association between the country's GDP and the aggregate deposits held by banks. The authors propose that GDP serves as a pivotal factor in clarifying the variations in deposit levels within the banking sector of Ghana. Similarly, Abiodun (2021) discovered that local currency deposits are significantly and positively impact the GDP in Nigeria. The authors asserted the significance of GDP as a determining factor for bank deposits in Nigeria. In contrast, the study conducted by Ananwude (2021) revealed that the GDP growth rate does not significantly influence the level of deposits within the banking sector of Nepal. These observed differences indicate that the association between GDP and bank deposits depends on the specific context and is influenced by country-specific factors.

In the Islamic banking sector context, Islamic deposits may have a favorable relationship with GDP. According to Abdulazeez et. al. (2019), the relationship between Islamic bank deposit growth and GDP growth is favorable and robust. However, Ali et. al. (2017) reported that GDP has a negative but minor relationship with Islamic bank deposits in emerging nations. A study conducted by Aldalaien (2019) discovered that Islamic banks United Arab Emirates (UAE) has the potential to substantially contribute to the GDP. The researcher proposes that Islamic banks should develop and innovate new features of products and services that adhere to the principles of Sharia (Islamic law) to satisfy the needs and preferences of their clientele. In addition, the researcher suggests utilizing contemporary technology and competencies inside banking institutions to effectively contribute to the advancement of the economy and society.

Furthermore, Hachicha and Ben Amar (2015) research examined the Malaysian context. The authors finding indicate that over an extended period, the GDP of Malaysia does not exhibit a significant correlation with Islamic financing, which is a resource from the bank deposits fund. Moreover, M. Anwar et. al. (2020) explored the Islamic bank deposits influences on the financial development of Indonesia. The research findings indicate that total deposits' effects on GDP are driven mainly by intermediation rather than the effective allocation of resources in Islamic banks.

Therefore, financial institutions including Islamic banks, are of significant importance in facilitating and promoting the economic development of a country. GDP growth is associated with enhanced economic development, which may increase bank

deposit-taking capacity. Hence, from previous studies, there are connections between GDP, the economy's growth, and the generation of deposits. A substantial fluctuation in GDP, regardless of whether it increases or decreases, often has a notable impact on the market. Investors consistently express concern over negative GDP growth since it serves as one of the indicators used by economists to ascertain the presence of an economic recession.

In conclusion, it may be inferred that the correlation between GDP and Islamic deposits is intricate and contingent upon several contextual factors. Existing literature indicates that an increase in GDP can lead to elevated bank deposits, showing the expansion and advancement of the economy. However, the nature of this association may differ based on country-specific characteristics and regulatory requirements. A comprehensive comprehension of this intricate interrelationship is paramount for Islamic banks and stakeholders in effectively controlling deposit levels and fostering economic development. Further study is required to examine this correlation across many nations and geographical areas for a more thorough comprehension. Hence, it is imperative to explore further the Islamic banks in Malaysia regarding the relationship between GDP and the Islamic bank's deposit performance.

Therefore, the following hypothesis is formed:

H₉. Gross domestic product is positively associated with Islamic bank deposits.

2.4.2 Inflation

According to Krugman et. al. (2018), inflation is the phenomenon that happens when there is an upward movement in the price level of an economy. In contrast, deflation refers to the opposite scenario when there is a downward movement in the price level. It is indisputable that inflation diminishes the buying power of a currency as time progresses. Previous scholarly works have examined the association between the inflation rate and deposits in conventional and Islamic banking institutions. However, there is insufficient research on the empirical findings derived from previous literature on the relationship between inflation and Islamic deposits. Thus, a comprehensive understanding of how inflation contributes to Islamic bank deposits is still lacking.

Numerous scholarly research has been conducted to explore the relationship between inflation and bank deposits, yielding valuable insights into the determinants that impact deposit behaviors. Mohamed Youssef et. al. (2022) researched the influence of inflation rates on the deposit behavior of banks in Egypt. The research findings indicate a positive correlation between the volatility of inflation rates and the patterns seen in bank deposits, including local and foreign currencies. This discovery implies that as inflation rates rise, there is a greater likelihood for individuals and businesses to choose for depositing their savings in banks as a strategy to safeguard the purchasing power of their money. Moreover, research by Lee et. al. (2020) has shown that the influence of inflation and risk premium is significant in clarifying the fluctuations in bank deposit rates. The study revealed that inflation shocks had the most substantial impact on the variations in deposit rates.

Research in Nigeria conducted by Abiodun et. al. (2021) demonstrated that the inflation rate is one of the factors influencing bank deposits. Khodaei Valahzaghari and Kashfi (2014) examined the impact of several variables on bank deposits. They reported an inverse correlation between inflation and banking development, indicating that high inflation rates may impede the expansion of bank deposits. The main finding of the study conducted by Ali. et al. (2019) demonstrates the adverse effects of inflation on aggregate deposits. The authors argued that a substantial decline in the actual worth of aggregate deposits occurred due to depositor skepticism toward the banking system and the high levels of inflation seen throughout the early 1990s. Thus, the presence of macroeconomic instability resulting from inflation has a substantial adverse influence on bank deposits (Shi et al., 2021).

Several studies have examined the connections between inflation and Islamic deposits within the setting of Islamic banks. The study undertaken by Abduh et. al. (2011) examines the dynamic impact of inflation on the volatility of deposits in Islamic banks. The authors' findings suggest changes in depositors' spending habits during times of inflation. Specifically, the authors observe that depositors may tend to decrease their savings in Islamic banks when inflation rises. Despite the banks' efforts to enhance the rate of return, inflation necessitates individuals to seek more funds for living expenses, negatively affecting their total savings and deposits. Furthermore, Abduh et. al. (2011) said that financial crises favorably affect the overall deposits in Islamic banks. During economic turmoil, individuals may prefer the security and reliability provided by Islamic financial institutions, resulting in a surge in deposit inflows.

Moreover, Maritsa and Widarjono (2021) examined the stability of Islamic banking and observed that many macroeconomic conditions, such as inflation, have a detrimental impact on the strength of Islamic banks. Inflation induced by economic downturns has the potential to amplify the volatility experienced by Islamic banks. In research conducted by Setyowati (2019) examined the factors influencing Islamic banking products in Indonesia. The author's finding revealed that industrial output significantly affects Islamic bank deposits, while inflation serves as a determining element for Islamic bank financing. This implies that the behavior of Islamic deposits is significantly influenced by actual economic activity and inflation. Setyowati (2019) also reported the determinants of savings in Islamic banks and observed that inflation had a detrimental influence on bank deposits.

This research aims to investigate the effects of inflation on deposits in Islamic banks. Most of the abovementioned references suggest a negative relationship between inflation and Islamic deposits. From the previous relationship, results demonstrate no inconsistency with the broader theoretical framework concerning inflation and saving and consumption patterns. As inflation increases, depositors may reduce their deposits in Islamic banks due to increased consumption needs. However, during financial crises, depositors may turn to Islamic banks as a safe haven, leading to an increase in deposits. Factors such as rates of return, industrial production, and macroeconomic stability can also influence the behavior of Islamic deposits. Interestingly, a past study also reports that financial crises positively affect total deposits in Islamic banks. This suggests that during times of crisis, depositors may seek the safety and stability offered by Islamic banks, leading to an increase in deposits.

In summary, the previous studies suggest that inflation may positively and negatively affect bank deposits. On one hand, inflation may incentivize individuals and businesses to deposit their funds in banks to preserve their money's value. On the other hand, higher inflation levels can hinder the growth of bank deposits and may require banks to adjust their deposit rates accordingly. The effects of inflation on bank deposits might differ based on many circumstances, such as the country, type of banking system, and the overall economic environment. Hence, it is essential to research the correlation between the inflation rate and the deposit performance of Islamic banks in Malaysia. The significance of comprehending the influence of inflation on the efficacy of Islamic bank deposits in Malaysia is of substantial relevance since the correlation between inflation and bank deposits is extensive and diverse.

Therefore, the following hypothesis is formed:

H₁₀. Inflation is negatively associated with Islamic bank deposits.

2.4.3 Unemployment

Unemployment and bank deposits are interconnected in various ways. Banks normally utilized its capital and/or deposits for funding distributions to households and business owners. Hence, the operational behavior of business or enterprises typically affected by the funding activities provided by banks. For instance, small businesses' actions during recessions may have an impact on unemployment and the amount of employee's deposits in banks.

From investigation conducted by Gertler and Gilchrist (1991) that during periods of economic downturn, there is evidences that a contraction in bank lending to small enterprises, whilst credit funding to big firms experiences an increase. The researchers provided an explanation for the phenomenon of reduced lending to small businesses, highlighting its potential implications such as a decline in job possibilities and a subsequent increase in unemployment rates. Conversely, the increase in financing to major corporations might potentially facilitate their growth and contribute to the generation of employment opportunities. Additionally, Gertler and Gilchrist (1991) conducted a study which revealed that small enterprises are more vulnerable to slow movements in gross national product (GNP) as compared to big firms. Due of their susceptibility to economic circumstances, small enterprises may struggle to sustain employment levels during recessions, and may experience a more severe reduction in revenues as a result of restrictive monetary policy than larger companies. This phenomenon has the potential to result in decrement in workforce and an elevated rate of unemployment.

In addition, Davis and Haltiwanger (1992) explores the diversity of employment movements within the manufacturing industry in the United States. The researchers reveal a correlation between the reorganization of jobs and the redistribution of workers. The cyclical nature of the labor market and its possible implications on unemployment, as well as its indirect effects on bank deposits, are emphasized by the researchers. Likewise, the study conducted by Gertler et. al. (2003) investigates the effects of financial crises on both macroeconomic indicators and overall wellbeing. The researchers discovered that implementing fixed exchange rates

might intensify financial crises, impacting unemployment rates and the equilibrium between the supply and demand of bank deposits. Although the references provided do not explicitly discuss the precise correlation between unemployment and bank deposits, they provide valuable insights into the many elements that may impact this connection. Several factors, including labor market shocks, shifts in monetary policy, and macroeconomic circumstances, might influence the correlation between unemployment and bank deposits differently. An additional study that particularly examines the correlation between unemployment rates and bank deposits would be very beneficial in order to enhance the depth and breadth of knowledge on this association.

Unemployment rates have been identified as a significant economic indicator for assessing the performance and stability of banks (Cahyono et al., 2021; Kasri & Azzahra, 2020; Ozili, 2018). Therefore, it is anticipated that a negative association exists between unemployment rates and the stability of the banking sector, suggesting that higher levels of unemployment are likely to be linked to increased instability in the banking industry. In the opinion of Ferrouhhi (2017), the impact of macroeconomic factors, such as unemployment, on deposit volume is shown to be statistically negligible. Additionally, the author posited a positive correlation between deposits and the unemployment rate. Casu et. al. (2018) stated that there is an expected inverse correlation between bank capital and the unemployment rate. The authors' findings suggest that the impact of economic downturn circumstances is such that an elevated unemployment rate might lead to a reduction in bank capital, indirectly decreasing consumer deposit-taking. Moreover, the studies conducted by Cahyono et. al. (2021)

and K. Li et. al. (2020) has shown a correlation between unemployment rates and non-performing loans. In contrast, a negative relationship is shown between the unemployment rate and bank deposits. These findings indicate that such dynamics might lead to instabilities within the financial system.

The significance of bank development concerning unemployment might also be substantial. In recent study by Nyasha et. al. (2022) examined the relationship between bank development and unemployment in Kenya. The researchers used many indicators, including bank deposits and liquid liabilities, to quantify the level of bank development. Results revealed a significant negative association between bank development and unemployment. This indicates that the presence of a thriving banking industry may positively impact the generation of employment opportunities and the reduction of unemployment levels. Inversely, the degree of unemployment may also impact bank deposits. Referring to the findings of Alebachew Legass et. al. (2021) it was said that an elevated level of unemployment in Ethiopia had a favorable effect on the development of commercial bank deposits. The event may be attributed to several variables, including the inflow of remittances and the motivation for people to deposit their earnings in banking institutions. Shah et. al. (2018) reported a negative association between unemployment in the first measure of bank liquidity. However, it was statistically noted that the connection was insignificant in the second measure. This result implies that the influence of unemployment on bank deposits may differ based on the particular measurement of liquidity and other variables.

Overall, the relationship between unemployment and bank deposits is complex and can be influenced by factors such as the behavior of small firms, bank operations and development, and the specific context of the economy. Understanding these dynamics is crucial for researchers, bank management, and other stakeholders in order to develop effective strategies for promoting banking sectors' stability, employment, and economic growth. Preceding studies on the relationship between the unemployment rate and bank deposits either in conventional or Islamic banks, are still inadequate. Nevertheless, it is essential to note that the relationship between unemployment and bank deposits is not always straightforward. The abovementioned past studies provide insights into the relationship between bank deposits and various factors. None of the provided references specifically focus on the relationship between unemployment and Islamic deposits. Unexpectedly, almost no published empirical studies have revealed the relationship between unemployment and Islamic deposits. Therefore, further research is needed to explore the link between unemployment and Islamic deposits.

Therefore, the following hypothesis is formed:

H₁₁. Unemployment is negatively associated with Islamic bank deposits.

2.4.4 Overnight Policy Rate

The overnight policy rate (OPR) is a key tool used by central banks to implement monetary policy. It is the primary monetary policy instrument Bank Negara Malaysia (BNM) uses to influence the money supply, inflation, and economic growth. It refers

to the overnight interest rate in which banks may borrow or lend funds the central bank provides. Banks can also borrow funds from BNM at the OPR and lend it to other banks at a slight premium over the OPR. Besides, it serves as the fundamental benchmark for determining interest rates on diverse financial instruments, including loans, bonds, and deposits. Consequently, these interest rates exert influence on several facets of the economy. When the OPR is increased, it leads to higher interest rates on bank deposits, and it becomes more expensive for banks to borrow funds from one another. It increases borrowing money costs and encourages banks to save more of their deposit rather than lend them out. This reduces the economy's money, making it more difficult for individuals and businesses to access loans or financing. Thus, the relationship between OPR and bank deposits is complex and influenced by various factors.

In the event that the policy spread is very persistent, the OPR loses its signaling function, and the central bank loses control over interest rates. This emphasizes the need to consider interest rate spread dynamics when assessing the OPR's effects on bank deposits and other components of the economy. Existing research has shown that changes in the OPR can impact bank deposit behavior. Rajan and Zingales (1996) and Ang and McKibbin (2007) performed empirical investigations on financial growth, whereby they observed a positive correlation between economic development and financial depth. The latter encompasses several elements, such as interest rates and bank deposits. This implies that a rise in the OPR, which impacts interest rates, has the potential to result in elevated bank deposits and contribute to economic expansion. Nevertheless, it is crucial to acknowledge that the correlation between OPR and bank

deposits is not unilateral. In their study, Ang and McKibbin (2007) researched Malaysia and discovered a bidirectional association between financial development and economic growth. This indicates that an elevation in the OPR has the potential to result in increased bank deposits and growth in the economy. Contrarywise, economic growth may also contribute to improving the financial depth, including more liquidity in bank deposits.

Previous studies have shown that changes in the OPR may substantially impact banks' lending and deposit activities. Bernanke and Gertler (1995) have extensively researched on how monetary policy, affects many parts of aggregate spending, such as durable goods, fixed investments, housing, inventories, and consumer durables, which then affect the country's economic activity. This implies that interest rate fluctuations might potentially impact the bank deposit patterns. From an additional standpoint, the study by Arnould et. al, (2022) examined the correlation between bank solvency and various financing expenses, including overnight deposit rates. The findings revealed a noteworthy inverse association between bank solvency and funding costs. This implies that changes in the OPR have the potential to impact the financing expenses incurred by banks, therefore exerting an effect on deposit rates.

The interest rates paid on overnight credits have been discussed in the literature of the last decade (Laine et al., 2011). The overnight money market rates play a key role in indicating the expected interest rate level and monetary policy stance (Nautz & Scheithauer, 2011). Raj and John (2020) studied the central banks of the United States, Europe, and India, setting the country's interest rates amidst the surplus of liquidity.

Other previous researchers found a positive correlation between bank deposits and interest rates, such as Bikker and Gerritsen (2018), Ferrouhi (2017), Mashamba et. al. (2014), and Ostadi and Sarlak (2014).

The correlation between interest rates and bank deposits is paramount in both conventional and Islamic banking system and has been the focal point of several academic investigations. Previous researchers such as Ergec and Arslan (2013) and Aysan et. al. (2018) reported that interest rates visibly influence Islamic banks in Turkish banking sector despite their reliance on interest-free banking. The researchers discovered that a rise in interest rates negatively affects Islamic bank deposits while it increases deposits held at conventional banks. These findings indicate that Islamic bank deposits behavior experienced more significant responses to changes in the OPR. Additionally, the authors also observed that tight monetary policy, reflected in a higher OPR, resulted in a more significant tightening in Islamic bank credits. This finding highlights the responsiveness of Islamic banks to changes in the OPR and their cautious approach to extending credit during periods of tight monetary policy.

In addition, the study conducted by Ponziani and Mariyanti (2020) examined the influence of Islamic banks on the transmission mechanism of monetary policy. Their research findings indicate a causal association between the Islamic interbank overnight rate and Islamic deposits and financing. This implies that changes in the OPR may impact the conduct of Islamic deposits and funding, which are essential elements of the monetary transmission mechanism. Islamic banks use interest rates to set profit rates for financing products and term deposit accounts. The authors also

elucidated that the responsiveness of Islamic bank deposits to changes in monetary policy exhibits heterogeneity among diverse nations. In the long term, it was observed that Bahraini Islamic bank deposits showed a higher degree of sensitivity to monetary policy. Still, Malaysian Islamic bank deposits had greater stability in response to policy changes.

Existing research has shown that Islamic banks, which depend significantly on deposit financing, may have distinct sensitivity towards fluctuations in the OPR compared to conventional banks. In a study by Setyowati (2019) an examination was conducted to analyze the determinants of savings in Islamic banks. The research findings indicated a relationship between interest rates and Islamic deposits is positively associated. Additionally, a strong correlation was seen between larger Islamic deposits and elevated rates of return. Additionally, Aysan et. al. (2017) discovered that the lack of responsiveness in Islamic bank deposit rates may impede the capacity of the banks to retain depositors who consider the opportunity cost of raising the OPR as unmanageable. Both studies suggest that Islamic banks may have difficulties recruiting and maintaining depositors during high OPR. Furthermore, Aysan et. al. (2017) also reported the correlation between currency and inflation shocks and observed that Islamic banks may have more pronounced reactions than regular banks. This implies that Islamic banks could respond more to macroeconomic shocks and subsequently adapt their operations in response.

By referring to the abovementioned sources, OPR has a substantial influence on bank deposits and several aspects of the economy. Variations in the OPR can potentially affect the conduct of small enterprises, bank loan provisions, the expenses

associated with obtaining funds, and the process through which monetary policy is transmitted. Moreover, the correlation between OPR and bank deposits is subject to the effect of other variables, such as the level of financial development, economic growth, and the particular circumstances of the economy under examination.

Additionally, past studies indicates that Islamic banks exhibit more sensitivity to OPR fluctuations than conventional banks. Elevations in the OPR may have adverse implications for deposits in Islamic banks, perhaps resulting in a more substantial contraction in loans extended by Islamic banks. The modification of the OPR can affect the behavior of bank deposits and contribute to economic development. However, it is essential to note that this connection is not solely one-directional and may be impacted by several other variables. The results above underscore the significance of considering the distinct characteristics of Islamic banking when examining the correlation between the OPR and Islamic deposits. Policymakers and researchers must comprehend the correlation between the OPR and Islamic bank deposits. This comprehension enables the assessment of the effectiveness of monetary policy and its consequences on the economy.

Therefore, the following hypothesis is formed:

H₁₂. Overnight policy rate is positively associated with Islamic bank deposits.

2.5 Regulatory Requirements -Independent Variable

In the banking industry, regulatory requirements are vital, especially for safeguarding the stability and soundness of financial institutions. One crucial regulatory framework

element is overseeing and controlling banking operations. Sellami and Tahari (2017) emphasize the importance of Islamic banks' reporting disclosures on standard compliances for auditors and regulatory agencies, such as bank licensing qualifications, capital adequacy standards, and depositor safeguarding. The compliance standards aim to safeguard the interests of shareholders, investors, and depositors. The primary objective of the standards is to address and reduce the systemic risks within the banking sector while concurrently fostering a culture of openness and accountability. Compliance with regulatory obligations is of utmost importance in maintaining legality and preserving the soundness of the financial system A. Ahmad et. al. (2021). Regulatory authorities are accountable for overseeing financial institutions and enforcing sanctions in response to non-adherence to regulatory obligations. The enforcement mechanism is a means of encouragement and stimulates banks to comply with regulatory obligations.

A correlation exists between regulatory requirements and the behavior of bank deposits. Laeven and Levine (2009) investigates the influence of bank governance, regulation, and risk-taking. The researchers discovered that the correlation between bank governance and regulatory obligations, such as capital requirement standards and safety net for depositors, is contingent upon the bank's ownership structure. This finding emphasizes the need to consider the distinct characteristics of different banks throughout the formulation and execution of regulatory mandates. Furthermore, Islamic banks have distinct challenges regarding the safety net for depositors within the regulatory framework of bank deposit-taking (Bhuiyan et al., 2020). Thus, the regulatory framework has to establish adequate laws and regulations to safeguard

depositors' money that aligns with Islamic values. This entails establishing an appropriate amount of capital inside the central bank or other mechanisms to address customers' needs for a safety net effectively. The regulatory problems include several aspects, including the chartering or licensing function, prudential regulation and supervision, intervention and resolution procedures, and capital adequacy norms (Bhuiyan et. al., 2020).

Islamic banking works under a distinct regulatory structure that is governed by principles derived from Shariah law (Mooneeram-Chadee, 2020). The regulatory standards imposed on Islamic banks exhibit notable distinctions compared to conventional banks, mostly stemming from the prohibition of interest (riba) and the commitment to ethical and moral ideals. These standards aim to assure adherence to Islamic principles and preserve the integrity of activities within Islamic banking. According to Arshed and Kalim (2021) governmental bodies and regulatory authorities can enact appropriate policy measures to foster the expansion and advancement of the Islamic deposit market.

The management of deposits constitutes a significant facet of regulatory obligations pertaining to Islamic banks. Islamic banks provide a range of deposit instruments that adhere to the rules of Shariah, including profit-sharing investment accounts (PSIAs) and mudharabah deposits (Arshed & Kalim, 2021). These deposits function on profit and loss sharing, whereby depositors participate in the profits created via the bank's investing endeavors. The regulatory framework for Islamic deposits emphasizes guaranteeing transparency, equity, and adherence to Shariah

principles in the administration and allocation of profits to depositors (Arshed & Kalim, 2021). Hence, more investigation is required to explore the precise ramifications of regulatory obligations on Islamic deposits and the deposit behavior inside Islamic banks.

2.5.1 Section 2(1), Islamic Financial Services Act 2013 (IFSA 2013)

The Islamic Financial Services Act (IFSA 2013) is a legislative measure implemented in Malaysia to oversee and control the banking operations conducted by Islamic financial institutions. Section 2 of the IFSA 2013 delineates the regulatory stipulations that significantly impact Islamic deposits. The legislation revokes previous statutes and establishes a definitive differentiation between deposit and investment accounts. The primary objective of IFSA 2013 is to improve openness and financial reporting within Islamic financial institutions.

According to Budiman et. al. (2019), the legislation mandates that Islamic banks engage in financial reporting practices that enhance openness and guarantee adherence to Shariah principles. This aligns with the intention to advance financial stability and uphold Shariah-compliant principles (Mohamad & Hassan, 2019). One of the modifications implemented by the IFSA 2013 is the need for Islamic financial institutions to discontinue any operations that do not align with Shariah principles (Budiman et. al., 2019). This highlights the need to guarantee Shariah adherence in the functioning of Islamic banks (Ahmad, Z., 2023). Thus, the introduction of the IFSA 2013 has significant consequences for financial institutions, regulators, and

policymakers in Malaysia. The regulatory structure fosters Shariah compliance, enhances transparency, and ensures financial stability within the Islamic banking industry. Therefore, the regulatory requirements implemented by IFSA 2013 have significant consequences for the disclosure and reporting procedures on Islamic deposit products.

Ahmad, Z., (2023) analyzes the adherence of two Malaysian banks to the regulatory criteria set out by the IFSA 2013. The research findings indicate that both banks examined demonstrate adherence to the recommendations, demonstrating their compliance with the regulatory standards established by the IFSA 2013. Ahmad (2023) analyzes the influence exerted by the IFSA 2013 on the investment and deposit products provided by Islamic banks operating within the Malaysian context. This research presents findings highlighting the possible impact of regulatory modifications on the structure and content of Islamic banking offerings. According to the study, there has been a notable decline in the quantities of investment products after the implementation of the IFSA, in contrast to the volumes of deposit products.

The reviewed literature does not explicitly discuss the correlation between regulatory requirements and Islamic deposits. It may be presumed that regulatory restrictions, including profit-sharing schemes and adherence to Shariah standards, may influence the behavior of Islamic depositors. In order to attract and keep depositors, Islamic banks must ensure compliance with regulatory duties while simultaneously providing competitive rates of profit Ali, M., et. al. (2017). An additional study

focusing primarily on the correlation between regulatory requirements and Islamic deposits would give a more comprehensive understanding of this issue.

In conclusion, Section 2 of IFSA 2013 introduces regulatory requirements that may impact Islamic deposits. The act emphasizes the importance of Shariah compliance, enhances transparency and financial reporting, and provides a clear distinction between deposit and investment accounts. The implementation of IFSA 2013 has significant implications for Malaysia's Islamic banking sector, promoting stability and safeguarding Shariah-compliant practices. The references provided light on the factors influencing Islamic deposit behavior and fluctuations. While the references do not directly address Section 2 of IFSA 2013, they contribute to understanding the dynamics of Islamic deposits and the factors that influence deposit behavior in Islamic banks. Further research focusing on the relationship between Section 2 of IFSA 2013 and Islamic deposits would provide more comprehensive insights into this matter.

Therefore, the following hypothesis is formed:

H₁₃. Section 2 of IFSA 2013 is positively associated with Islamic bank deposits.

2.6 Customer Type – Business Enterprise Depositors

There are three common customer types of Islamic bank depositors, namely business enterprise depositor, individual depositor and government depositor. The following references provided an insight into the importance of two main bank depositors; notably business enterprise depositors and individual depositors.

Bank depositors play a significant role in various aspects of the banking sector. Several studies have provided evidence supporting this claim. The defining role of banking sector as financial intermediary institutions is the engagement in both deposit-taking and lending activities (Kashyap et al., 2002; Azolibe 2019). Asutay and Othman (2020) examines the impact of multiple types of Islamic deposits on banks' default rate. According to the authors, the degrees of information and reliability shown by depositors may differ based on the specific forms of Islamic contracts used. Athief and Ma'ruf (2023) emphasize the religious commitment among depositors in Islamic banks, underlining the significance of religion as a driving force behind depositor behavior in Islamic banks. Vuong et. al. (2020) investigates the many elements that influence of individual customers to make savings deposits in commercial banks. The research finding sheds light on the significant factors that play a role in shaping the depositor's decision.

Berger and Udell (2005) examine the correlation between lending and lines of credit within the context of small-firm financing. It emphasizes the significance of business enterprise depositors in facilitating credit access and funding for small businesses. These references highlight the significance of both business enterprise depositors and individual depositors that play an essential function in deposit mobilization in the banking industry. The abovementioned references collectively signify the importance of bank depositors as a significant variable in the banking sector. Furthermore, the references also suggest that business enterprise depositors contribute more to credit access and financing for small firms as compared to individual depositors. Thus, understanding the needs and preferences of different types

of depositors is essential for banks to develop effective strategies, retain customer loyalty, and maintain financial stability.

Aside from the supporting statements given by the references provided in paragraph two above, the essential role of business enterprises depositors can be proven by facts on the data analysis in Chapter Four of this research, with regards to the substantial volume of deposits collections by the business enterprises depositors as compared to individual depositors. Therefore, it is noteworthy to determine that business enterprises depositors play a significant role in the banking industry, including Islamic banking. As discussed in the following paragraph, several studies have highlighted the importance of business deposits and their impact on various aspects of banking operations.

The study was conducted by Ab Rahman et. al. (2021) investigated the elements that impact the deposits of Islamic banks in Malaysia. The authors suggested that Islamic banks should focus on attracting more business enterprise customers and take advantage of high inflationary periods to attract more depositors. The research undertaken by Zietsman et. al. (2019) thoroughly examined the correlation between business banking customers, including micro-enterprises, and their respective banks. The researchers discovered that relationship banking is of the utmost importance for micro-enterprises since their ability to get financing in competitive and realistic conditions is essential for their continued existence and expansion. The research findings also emphasized the significance of perceived pricing fairness, service quality, and perceived value in influencing the association between business customers

and their banks of choice. Promoting transparency in service charges and interest rates was highlighted to improve customer satisfaction and boost perceived values.

Recent research conducted by Nufus et. al. (2021) investigates the impacts of the COVID-19 pandemic on the allocation of credit to micro, small, and medium enterprises in the region of East Java, Indonesia. The research emphasized banks' significance in facilitating operating cash and investment provision to the sampled businesses. The study revealed that the COVID-19 pandemic had a substantial adverse impact on loans granted to medium-sized enterprises. Still, loans extended to micro and small enterprises had more resilience in the face of the crisis. The research also highlighted the significance of third-party deposits in impacting the credit of micro, small, and medium enterprises.

Prior researchers shed light on the significance of business depositors in the banking industry, including Islamic banking. The cited sources emphasize the factors influencing deposits, the function of relationship banking, and the effect of external crises on the distribution of credit to business depositors. In conclusion, the references highlight the significance of business enterprise depositors in increasing the generation of total deposits, thereby enhancing the liquidity and profitability of banks, including Islamic banks. It is suggested that Islamic banks should concentrate on recruiting more business depositors and capitalize on the greater volume generated by them. It is also evident that the behavior of Islamic bank depositors can enhance the influence of financial performance, deposit determinants, and the relationship between various variables in the context of Islamic banking. Understanding the role of business

depositors as a moderating variable is essential for Islamic banks to develop effective strategies and enhance their financial performance.

2.6.1 Business Enterprise Depositors as The Moderating Variable

A moderating variable, sometimes called an interaction variable, impacts the magnitude or orientation of the association between an independent and dependent variable. According to Baron and Kenny (1986) the process involves partitioning the independent variables into several subgroups and determining the areas where it exhibits the highest level of efficacy regarding the dependent variable. The moderator variable does not elucidate the cause-and-effect connection between the independent and dependent variables but instead impacts the magnitude or direction of that association. On the other hand, a mediator variable serves to elucidate the core processes of an independent variable's influences on a dependent variable. This concept encapsulates the underlying mechanism of the relationship between the independent variable and the dependent variable. Thus, the mediator variable is a variable that serves as an intermediary in elucidating the association between the independent and dependent variables (Baron & Kenny, 1986).

Several studies have examined the moderating effects of different variables in the banking industry. For example, the survey by Rajendran and Natara (2020) reported the impacts of demographic characteristics as moderators on the association between service quality and relationship quality within the context of Indian retail banks. The research revealed that age may function as a moderator within the service

business, indicating that the influence of service quality on relationship quality may differ based on demographic variables. In addition, the study conducted by Akinola (2022) studied the potential moderator of internal control adequacy, which may affect the association between bank size and financial performance. The research revealed that sufficient internal controls amplify bank size's impact on financial performance, suggesting that the association between these factors is contingent upon the extent of internal control measures implemented inside banks.

Furthermore, Goh et. al. (2022) examined the influence of credit risk as a moderator on the association between the capital adequacy ratio and financial performance among banking firms that are publicly listed on the Indonesia Stock Exchange. The research discovered that credit risk is a moderating factor, enhancing the association between the capital adequacy ratio and financial performance. These studies emphasize the significance of considering moderating elements within the banking industry. By identifying and understanding the moderating effects of various factors, banks can gain insights into how different variables interact and influence customer satisfaction, risk management, and bank performance. This information has the potential to influence decision-making processes and assist banks in formulating more efficient strategies to improve their operations and results.

The closest element that may be associated with business enterprises depositors' consideration as a moderating variable from prior research in the banking sector is by Ltifi et. al. (2016), Hoque et. al. (2018) and A. Khan et. al. (2019). Khan et. al. (2019) studied the moderating influence of industrial sector growth on the connection between banking factors and credit risk. The authors indicate that industrial

sector growth's moderating effect enhanced the association between lending capacity and non-performing loans. This implies that the expansion in the industrial sector impacts the volume of business enterprise deposits generated in the banks. In the context of Islamic banks, several studies have examined the role of moderating variables in influencing customer behavior.

In the context of Islamic banks, previous research has studied moderating factors affecting customer behavior. Ltifi et. al. (2016) explored the causes of the customers to choose their preferred Islamic banks in Tunisia and the possible impact of moderator factors, such as gender and age, in consumer decision-making. The authors indicated that customers evaluate variables such as service quality, trust, and conformity with Shariah principles when selecting an Islamic bank. They also discovered that gender and age act as modifiers between choosing an Islamic bank and the observed factors. This finding implies that characteristics and specific types of bank customer may act as moderating variables in determining which Islamic bank to put their money.

Hoque et. al. (2018) examines the impact of marketing communication and financial consideration on customer attitudes and intention to buy Islamic banking products. The researchers included relevant moderating elements and introduced a new factor, profit-loss sharing proportions, which might enhance consumers' inclination to acquire Islamic banking products. These studies emphasize the significance of considering moderating factors within the framework of Islamic banking. Through a comprehensive knowledge of the impact of relevant factors, Islamic banks can

customize their operational strategies and product offerings to cater effectively to their clientele's distinct requirements and preferences. This information can potentially enhance a more efficient and focused approach, especially concerning business depositors within the Islamic banking sector.

This review of past literature identifies notable patterns and limitations regarding the moderating effects of existing research. Explicitly, although there has been a growing interest in Islamic banking customer behavior, previous research has not adequately examined the potential moderating impacts of depositor types or characteristics. The scarcity of related information has been a challenge for academics and bank management in comprehensively elucidating the factors contributing to depositors' views and intentions about the performance of Islamic banking. This study proposes a novel moderating variable, namely business depositors, in light of the Islamic bank deposits' determinants framework. As of yet, this research represents the first attempt to introduce the potential moderating factor of business enterprise depositors, which may impact the association between independent and dependent variables within the framework of Islamic banking.

Therefore, the following hypothesis is formed:

H₁₄. Business enterprises depositors moderates the relationship between independent variables with Islamic bank deposits, such that this relationship is stronger when Business enterprises' deposits is high.

2.7 Related Theories

This subsection contains the discussion focuses on the application of the two fundamental related banking theories: notably the financial intermediation and liquidity creation, within the scope of Islamic bank deposits.

2.7.1 Financial Intermediation Theory

Labor, capital, and intermediated funds (primarily deposits) are used to generate bank revenues (Mohammed et al., 2018). There are two approaches to determine bank input and output: the intermediation and the production approach. According to Sealey and Lindley (1977), the bank's prominent role is the intermediation approach, where assets measure as outputs and liabilities measure as inputs. On the other hand, the production approach recognizes that the bank serves depositors with intermediation and payment services. In the production approach, labor and capital are inputs, whereas deposits are outputs. As a comparison, the production approach sees a bank as an entity that produces deposits and loans by using capital and labor.

The intermediation approach considers a bank to be a business that facilitates the transfer of financial assets between savers and investors (Wanniarachchige & Suzuki, 2011). The savers provide deposits while the investors can be both depositors and borrowers. Goldschmidt (1981) proposes a weighting method for deposits (both inputs and outputs) based on their intermediation or payments services. Many studies have embraced the intermediation technique for identifying inputs and outputs for

banks, even when non-credit outputs have been dealt with explicitly (Colwell & Davis, 1992). These also align with existing commercial bank research (Worthington, 2000).

Many see banks as financial intermediaries (De Bandt & Davis, 2000). Banks must act as middlemen to help depositors locate borrowers or find depositors (Ghazali & Mustafa, 2020). This situation emphasizes the role of banks as intermediators (Mettenheim, 2013). Using financial intermediation, banks borrow from depositors and lend to borrowers. In this view, banks are no different from non-bank financial institutions (Werner, 2014) Banks would lend more if they collect more deposits; hence loan volume is linked to deposit volume. This theory views banks as individual or collective financial intermediaries (Ghazali & Mustafa, 2020). As a financial intermediary, a bank cannot refuse incoming consumers to deposit money on demand, savings, or time deposits. Because this deposit is interest-bearing, a conventional bank must be able to pay interest on it. In this scenario, a bank lends money by putting loans into earnings assets. Volumes of loans and deposits are linked. In modern financial intermediation theory, banks should find qualifying projects and market them to primary investors or depositors (Ghazali & Mustafa, 2020).

Islamic banks, like conventional banks, are profit-maximizing organizations that play an important role in most Muslim countries. However, unlike conventional banks, Islamic banks do not charge or earn interest on all financial transactions including deposits. Instead, Islamic banks share profits and losses with depositors. In addition, Islamic finance does not aim to financial intermediation as the ultimate goal (Nawaz, 2019). Its aim is more holistic that is providing benefits to all as imbedded in

the Maqasid Shariah. This is echoed by Platonova et. al. (2018) that Islamic banking system consists of a set of ethical banking and economic practices based on the ontological and epistemological foundations of Shariah. These organizations exist to bring moral and fiduciary financial solutions to society.

As such, the funding and activity structures of Islamic and conventional banks differ. Islamic banks do not share the same principles, regulations, or experiences as conventional banks (Zarrouk et. al., 2016). There are also differences in financial intermediation (Tabash, 2019) The Islamic bank's business philosophy of financial intermediation stresses that the Islamic bank is a business entity that runs the capital provided by the depositor or capital provider (Nor et. al., 2015). Islamic banking is defined as financial entities that work to adopt and materialize Islamic financial and economic principles in the banking sector (Menacer et. al., 2019). According to Hassan (1999), Islamic banks are financial institutions whose rules, operations, and status indicate their duties to *Shariah* (Islamic law) principles. This indicates that Islamic banking is guided by Islamic economics and adheres to Shariah law (Aburime, 2008). In Islamic banking, assets and liabilities are anticipated to be integrated such that borrowers and banks share profits and losses, which in turn shares profits and losses with the depositors.

According to financial intermediation theory, liquidity risk is inherent in banks' role in maturing short-term liquid deposits into long-term illiquid loans (funding for Islamic banks) (Berger & Bouwman, 2009). In addition, El Qorci (2005) noted that in Islamic financial intermediation, investment risk is the most crucial operational risk

affecting Islamic banks' PLS (Profit Loss Sharing) activities. Furthermore, according to Yusof and Bahlous (2013), Islamic financing is a unique form of financial intermediation where the fund provider shares in the project's revenues and losses. Therefore, adopting PLS for financial intermediation is a competitive strategy to promote growth (Hafnida et. al., 2015).

The Islamic banking system emerged as a new intermediation institution. According to Beck et. al. (2016), Islamic banks rely on tight partnerships with non-financial firms. The World Bank and the International Monetary Fund (IMF) also acknowledged Islamic financial products as an alternative financial intermediation method (Sundararajan & Errico, 2002; World Bank, 2013). During the 1990s, while the Islamic banking industry grew, non-bank financial entities were also developed (Abedifar et al., 2016). Islamic participatory schemes allow Islamic banks to provide longer-term financing for projects with higher risk-return profiles (Daly & Frikha, 2016). So, Islamic banks' efficient financing procedure will likely boost financial intermediation efficiency, allowing firms to better access credit (Khan et. al., 2020). Islamic banking offers Shariah-compliant products and services that virtually eliminate interest (riba). Besides financial intermediation, Islamic banks offer various financial services to consumers to diversify their income. The Islamic banking industry has significantly improved the financial system, and boosting economic growth (Gani & Bahari, 2021). Gani and Bahari (2020) also noted that the Islamic banking sector in Malaysia performed well in its primary duty of financial intermediation.

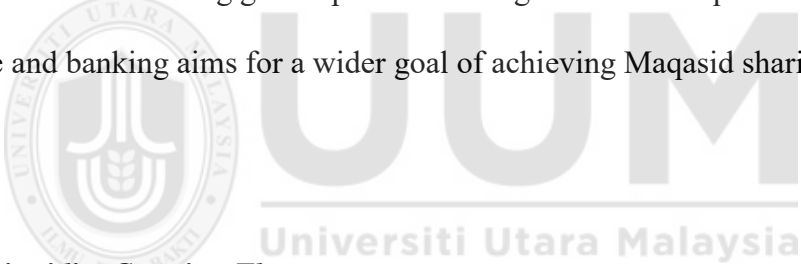
Disintermediation is the process of avoiding the need for bank intermediation as a source of funds. Instead, Schwarcz (2011) stated that disintermediation relies on capital, other financial markets, and other financial institutions that employ those funds to operate in the real economy. Financial disintermediation is the transfer of funds from savers to the deficit segment of the economy without the presence of an intermediary. For instance, micro-level disintermediation may be caused by non-banking financial institutions becoming more active. In this era of digital, mobile banking is used with the concept of branchless in developing countries to register transactions of illiterate and unbanked populations (T. Khan, 2018). The wave of disintermediation has also emerged in developed countries (Schmidt et. al., 1999).

As stated earlier in this chapter, the deposit contract generates a collective action dilemma among depositors, resulting in a bank run and total disintermediation. This disintermediation prevents the banker from covering the initial cost of liquidation skills (Dietrich–V., 2004). Studies reveal that interest rate ceilings lead to disintermediation, threatening bank liquidity and financial stability (Hardrshott, 1971; Vernon, 1973; Mckelvey, 1978). Due to bank failures, depositors have shifted funds from smaller, more vulnerable banks to larger, more stable institutions (Ubegbunan, 1999).

Banking intermediation is vital to economic growth (Beck & Levine 2004). However, financial disintermediation increases as financial innovation increases (Sibanda, 2013). Disintermediation replaces bank finance with marketable bonds, mortgages, loans, and other financial assets (Dore, 2008). Growing pension funds may

boost competition for banks since funds formerly stored in banks are transferred to capital markets via pension funds (Beck L., 2002). As such, depositors' reliance on banks has shifted to other financial institutions like mutual funds, pension funds, and insurance firms (Sibanda, 2013).

Previous researchers debated the disintermediation and reintermediation of conventional banks, but continuously ignored the prospect of disintermediation and reintermediation through Islamic banks (Naqvi et. al., 2017). Overall, the theory of financial intermediation applies to both conventional and Islamic banking since banks are financial intermediaries. However, their objectives differ. As deliberated earlier, the conventional banking goal is profit – making while the unique structure of Islamic finance and banking aims for a wider goal of achieving Maqasid shariah.



2.7.2 Liquidity Creation Theory

Before discussing why banks need to create liquidity, it is important to understand why there is a demand for liquidity from bank customers. Demand for liquidity arises from uncertainty about when to consume and consequently how long to hold an asset. As a result, customers are more concerned with the value of liquidating their assets on multiple dates rather than just one. Creating more liquid deposits maintained by banks than holding assets is a form of insurance where depositors can obtain liquidity much easier and faster. The only constraint here is that customers share the risk of some financial loss for early asset liquidation. For instance, if a customer has a 3-month

deposit with a bank which to withdraw his deposits prior maturity date (less than the 3-month period), he will have to incur some loss for penalty charges. This explains an important function of banks. They provide a safe avenue for deposits to customers but at the same time, they run the risk of liquidity if there are heavy withdrawals on demand deposits by customers. In worst case, banks are exposed to bank runs if too many depositors withdraw their deposits.

The mismatch of a bank's liquidity happens when a bank provides long-term loans that cannot be traded quickly at a high price, and at the same time, the bank also issues demand deposits that allow depositors to withdraw at any time. This liquidity mismatch, in which a bank's liabilities are more liquid than its assets, has caused problems for banks when too many depositors attempt to withdraw at once (a situation referred to as a bank run). Banks have followed the government's policies to stop runs, and the government also has instituted deposit insurance to prevent bank runs. Diamond and Dybvig (1983) develop a model to explain why banks choose to issue more liquid deposits than their assets and understand why banks are subject to runs. The model has been widely used to better understand bank runs and other financial crises, as well as measures to avoid them. Diamond and Dybvig (1983) argue that an important function of banks is to create liquidity, that is, to offer deposits that are more liquid than the assets that they hold. Investors who demand liquidity will prefer to invest via a bank rather than have assets directly.

Creating liquid deposits is one crucial function of financial intermediaries like banks. Another function is monitoring borrowers and enforcing loan covenants. The

latter function is modeled in Diamond (1984) and is described in a simple framework in Diamond (1996). Banks can create liquidity by offering deposits that are more liquid than their assets. If only the proper depositors withdraw, it works very well. However, making this liquidity subjects the bank-to-bank runs (Diamond, 2007). Then, the bank may have liquidity problems.

Berger et. al., (2007) critique that comprehensive measures of bank liquidity creation do not exist even though the modern theory of financial intermediation portrays liquidity creation as an essential role of banks. The authors find that bank liquidity creation increased every year and created the most liquidity for all types of banks such as large banks, multibank holding company members, retail banks, and merged banks. Nonetheless, from their findings, bank liquidity creation is positively correlated with bank value. This implies that bank liquidity is increased as the bank value increases. The study also shows the relationship between capital and liquidity creation, that is the relationship is positive for large banks and negative for small banks. According to the authors, bank liquidity performance equals 70 % of gross loans and 58 % of total deposits, which puts liquidity creation in context with bank size.

Analysis of banks' role in creating liquidity and thereby spurring economic growth have a long tradition, dating back to Adam Smith (1776). Modern reincarnations of the idea that liquidity creation is central to banking appear most prominently in the formal analyses in Bryant (1980) and Diamond and Dybvig (1983). These theories argue that banks create liquidity on the balance sheet by financing

relatively illiquid assets with relatively liquid liabilities. Holmstrom and Tirole (1998) and Kashyap et al. (2002) suggest that banks create liquidity off the balance sheet through loan commitments and similar claims to liquid funds. Risk transformation may coincide with liquidity creation, such as when banks issue riskless liquid deposits to finance risky illiquid loans.

The liquidity creation and risk transformation do not move in perfect tandem. The amount of liquidity created may vary considerably for a given amount of risk transformed Berger et al. (2007). Most of the literature has focused on banks' role as risk transformers rather than as liquidity creators.

While much literature on liquidity creation involved conventional banks, comprehensive measures of Islamic bank liquidity creation are absent. Several questions need to be addressed, such as how much liquidity does the Islamic banks create? How has Islamic bank liquidity creation changed over time? Which banks create the most and least liquidity? What are the value implications of bank liquidity creation? Hence, it is essential to study the roles of Islamic bank deposits as liquidity creator and in what way, the liquidity creation theory is applicable to Islamic banking deposit performance.

Liquidity management is equally essential for conventional and Islamic banking (Anggun & Waspada, 2019). But the difference in Islamic banks is unique and even more challenging because the instruments used for liquidity management are not interest-based for Islamic banks (Ariffin & Kassim, 2013). The majority of studies examining the Islamic banks' profitability suggest that Islamic banks should be more

liquid and therefore less exposed to liquidity risk (Bakeri & Malik, 2020). According to Horváth et. al. (2014), the literature on banks' liquidity creation remains scarce because its expansion is a recent development in the wake of Berger and Bouwman (2007) pioneering article. More specifically, as Akin and Ozsoy (2021) stated, recently, there is growing empirical literature analyzing their performance in terms of the liquidity creation of Islamic banks. As Berger et al. (2018), argues that despite the growth of Islamic banks, little is known about their liquidity creation performance which is one of the fundamental roles of financial intermediaries. Thus, this research focuses on the role of liquidity creation, specifically by Islamic banks' deposits, to fit this study's theoretical gap.

2.7.3 Conclusion

The new era scholars have re-embodiment the liquidity formation as a key factor for banking business appears most prominently in the modern economy (Bryant, 1980; Diamond & Dybvig, 1983). The theory suggests that banks create balance sheet liquidity by funding relatively illiquid assets with relatively liquid liabilities. Other scholars such as Holmstrom and Tirole (1998) and Kashyap et. al. (2002) indicate that banks often generate liquidity off the balance sheet through loan commitments and related liquid funds claims.

Some previous literature suggests that bank capital can hinder the development of liquidity by making the bank's capital structure less fragile. Diamond and Rajan (1999, 2000) refer to the banks' financial fragility to the theory regarding the

relationship between bank capital and liquidity creation. A fragile framework of capital allows the bank to control its borrowers, allowing it to extend loans. For a less fragile bank, extra equity capital makes the bank more difficult to commit to controlling and monitoring the borrowers, hindering the bank's ability to generate liquidity.

Banks' financial fragility is the subject of Diamond and Rajan (1999, 2000). The scholars model a partnership concept where banks raise investors' funds to provide financing for entrepreneurs. Through this partnership concept, the bank minimizes the amount of funds attainable because the entrepreneur may be able to withhold the bank's effort in funding. More significantly, an initiative that restricts the ability of the bank to collect funds can also be withheld by the bank itself.

Gorton and Winton (2017) believed that capital can reduce liquidity production. since deposits are "crowded out". A deposit contract mitigates the funding withholding issue of the bank because through depositors, the bank able to maximize the production of liquidity. Capital providers are unable to run a bank, limiting their ability to supply funds and, as a result, reducing liquidity production. This means that bank's capital ratio determines how much liquidity it can create. However, Gorton and Winton (2017) demonstrated how a higher capital ratio would lower the output of liquidity through the crowding out of deposits.

Diamond (2007) claims banks normally offer loans for long term profits. Banks issue demand deposits that depositors can be withdrawn at any time. Liquidity mismatch occurs when a bank's liabilities exceed its assets. When too many depositors

seek to withdraw at once, banks face issues of bank run. In order to prevent and discourage bank runs, governments have established deposit insurance. Diamond and Dybvig (1983) established a model to demonstrate reasons banks choose to provide more liquid deposits and to avoid bank runs. Diamond and Dybvig (1983) argue the liquidity creation concept whether it is an essential feature of banks by providing more liquid deposits than the assets they possess.

Aspects of banking operations must also be considered when analyzing bank capital sufficiency. Depositors' funds should only be used to fund short-term loans. A huge maturity mismatch can occur when banks employ this short-term fund to finance long-term assets like mortgage securities. So, if interest rates unexpectedly rise, especially as the economy weakens, banks may be unable to hold investments. Maturity mismatch exposes the bank to interest rate risk and must be addressed (Abdul Karim et al., 2014b)

The position of bank liabilities, mainly deposits, is very controversial. Darby (1975) has emphasized the theoretical underpinning for recognizing the importance of bank deposits in banking. The relevance of deposits in the money supply process for banking was emphasized (Eriemo, 2014). The development approach and the financial intermediation approach are the two main approaches to handling bank deposits.

One of the controversial issue in literature is the position of deposits in banking operations. The key misunderstanding stems from the disagreement between researchers as to whether bank deposits are suitable inputs or outputs in the production

process of a banking business. Some researchers regard deposits as inputs, while others see deposits as outputs. This inconsistency of methods leads to a conflicting calculation of the productivity of bank deposits (Uchino, 2014).

Another theoretical gap is few application of liquidity creation theory to explain banks' asset and liability management (ALM). ALM continues to pose challenge to Islamic banks. This is because many studies in banking have employed financial intermediation theory, but few use liquidity creation theory to explain banks' functions. According to (Diamond, 2007), there is a mismatch between an asset (loan) and liability (deposit). This mismatch exists in both conventional and Islamic banks resulting in liquidity problems.

Liquidity creation theory, however, stipulates that creating bank deposits in short term maturity structure is more liquid than other assets. This provides ease of liquidity to customers. At the same time, it's like an insurance policy where depositors share the risk of losing an asset (Dymond & Dybvig, 1983).

The discussion on the liquidity creation theory has been very much on conventional banking. However, the application of liquidity creation theory has not been investigated in the Islamic banking context. Furthermore, past studies have not included the Islamic worldview on Maqasid Shariah relating to deposit performance of Islamic banks. This proposed study intends to fill this theoretical gap.

2.8. Maqasid Shariah Concept

As indicated previously, an Islamic bank's role is more complex than that of a conventional bank. A bank bearing an Islamic label has a lot more to perform than its conventional counterparts. Profitability for Islamic banks is paramount (Rosly, 2019). The essential requirements of an Islamic bank must not only comply with Shariah Law as a regulatory requirement but also satisfy the ideal obligations of *habluminallah* (relationship with Allah S.W.T.) and *habluminannas* (relationship with other people) in Islamic teaching. Islamic banks' duties for efficiency and effectiveness in profit-making must be within the boundaries of Shariah rules and Islamic principles. The Islamic boundaries' purpose is to make sure all parties involved are protected and safe. These Islamic obligations are according to the prevalent concept of Maqasid Shariah.

Maqasid Shariah (the goals of Islamic law), as defined by Ibn' Ashur, a well-known Islamic scholar in the twentieth century, is the meaning and secrets that can be comprehended from Shariah viewpoints as part of the Shariah process (Abdul Rahman, 2015). From a fundamental standpoint, Maqasid Shariah is divided into three categories: necessities (*dharuriyyat*); conveniences (*hajiyyat*); and refinements (*tahsiniyyat*). Five elements of *dharuriyyat*, including religion (*ad-din*), life (*an-nafs*), mind (*al-aqal*), descendent (*an-nas*), and wealth (*al-mal*). Islam forbids all transactions related to *riba* because it is intended to protect property (*al-mal*) under the element of Maqasid Shariah.

In order to attract term/time (fixed) deposits, Islamic and conventional banks compete. A term deposit in a conventional bank has a fixed interest rate. However, in

an Islamic bank, the depositor is paid with an ex-post rate of return (Hamza, 2016). According to economic theories and practical considerations, the interest rate is considered one of the major elements affecting savings and bank deposits (Mushtaq & Siddiqui, 2017b). The interest rate, also known as the cost of capital, is the amount of money the lender receives or the amount the borrower pays more than actual money. However, all forms of usury or riba are prohibited in Islam. In Islamic finance, riba refers to charged interest. It's also called usury. Usury is interest that exceeds the state's maximum rate.

Many Muslims believe Islamic banks are free of riba in all aspects of banking. This means that banks do not charge interest on their deposit products. Unlike Islamic banks, conventional banks pay depositors' interest. Deposits in conventional deposit accounts get a fixed interest rate regardless of the bank's performance. This explains why a bank pays interest to depositors even when it is losing money. If the bank makes more money than projected, only a fixed percentage goes to the depositors. This means that once chosen, such deposits guarantee a predetermined return. As a result, the deposits account return is assured. However, Islamic banks' policies vary. Relatively, Islamic banks make no "promises" on deposits or investments. Islamic banks compensate customers with a hibah based on the bank's performance. An Islamic bank's voluntary gift of currency to depositors is called hibah. Hibah is not approved if the bank does not generate a profit. Also, the depositor need not fear losing money if the bank does not make a profit. Upon request, the depositor receives his principle back (Amin, 2013).

Rosly (2019) discussed the objectives of Maqasid Shariah concept in his article. According to Rosly (2019), contemporary banking cannot achieve societal aims. One of the reasons is after accounting for inflation, depositors who lend money to banks would get less interest income. Depositors who lend to banks do so at low-interest rates and without necessary collateral. Cheap deposits used by banks to fund big firms can impair income imbalance and social unrest. Small and new firms without collateral risk are usually losing out on loans from banks. Small firms could create jobs but are unable to do so because bank loans are primarily for bigger firms that generate bigger profits.

Shariah concerns confront Islamic banking system (Rosly, 2019). They are both deposit-taking and commercial banks. Rosly (2019) further noted that *Al-bay* (sale contract) of Maqasid Shariah is the basis of the Islamic financial system. *Al-bay* is acceptable, *but riba is not*, says the Quran. The Quran forbids *riba* and supports *al-bay* as a substitute. Among other things, *Al-bay* describes the wholesale and retail company, but the major lesson is taking risks in business. The legal maxim "*al-ghurmu bil ghuni*" implies that profit is accompanied by loss and highlights a basic norm arising from the Quran (2:275) that one must incur risks to justify taking rewards. Regrettably, Islamic banks were born into a high-leverage market geared for usury-based, and sadly, Islamic banking's pioneers may have ignored this critical issue (Rosly, 2019). As a result, Islamic banks must also avoid taking excessive risks that endanger deposit protection. This eliminates Islamic banks' ability to pursue real-estate transactions whose risk profiles differ from deposit-taking banks (Rosly, 2019).

The Maqasid Shariah issues raised above concerning Islamic deposits must be treated seriously by Islamic banks. Research should be conducted to discuss the issue, as mentioned earlier, to find a feasible solution. It is intended that this research able to deliver meaningful insights as well as practical and reasonable solutions.

2.8.1 Shariah Governance

Shariah governance is commonly regarded as the structures and processes adopted by an organization to ensure compliance with Shariah. It complements the corporate governance of an organization.

The basic goal of Shariah governance is to ensure that an organization follows Shariah laws and regulations. Due to the industry's significant growth in Islamic finance worldwide, Shariah governance is receiving more attention. For Malaysia, the authority through BNM has taken a proactive role by introducing Shariah governance guidelines, including the Shariah Governance Framework 2010 (SGF 2010), the Islamic Financial Services Act 2013 (IFSA 2013), and the newest is the Shariah Governance Policy Document 2019 (SGPD 2019). These Shariah governance guidelines are supposed to support the development of Shariah governance practices, especially by Islamic banks in Malaysia. The analysis by Kamaruddin et. al. (2020) revealed that SGPD 2019 is the most comprehensive coverage of Shariah governance compared to IFSA 2013 and SGF 2010. The authors further strengthened that those three guidelines are still insufficiently thorough. There is still little to no study has been done on these Shariah governance principles, especially when it comes to the consensus on Islamic bank deposit products.

The emergence of Shariah governance, especially in Islamic Financial Institutions (IFIs), is consistent with the requirements of Maqasid Shariah. According to Abozaid and Dusuki (2007), to achieve the actual meaning of Maqasid Shariah, Islamic banks must ensure that all transactions are Shariah-compliant, not only in legal terms and economic terms but also in ethical terms such as the fiduciary obligations. Furthermore, Shafii et. al. (2010) state that the development of Shariah governance is essential for determining the procedures of Maqasid Shariah for each of the Islamic products (i.e., Islamic bank deposit) and services provided by Islamic banks. However, due to the tremendous development of the Islamic banking industry, Malaysian Shariah governance still appears to be at a crossroads (Kamaruddin et al., 2020).

In brief, to attain Islamic banks' financial and economic stability, Shariah governance in Islamic products (in this research, Islamic bank deposits) is an issue that needs to be addressed. As highlighted earlier, there is a gap in this area since it is not widely covered. Hence, a study is required to determine whether the performance of Islamic bank deposits meets the requirement of Shariah governance standards and applies Maqasid Shariah. However, this research, only be limited to Shariah-based regulatory requirements for Islamic bank deposits; Section 2 (1) of the IFSA 2013.

The banking industry is definitely in a quantifiable general equilibrium economy (Díaz-Giménez et al., 1992), and the financial crisis is the core of the banking crisis (Schwartz 1986). The meaning of a banking crisis is wide-ranging, and it could refer to problems such as illiquidity and/or insolvency (Díaz-Giménez et al., 1992). A banking crisis is either bank runs, banking panic, or significant banking sector

problems (Bordo & London-lane, 2001), and it is usually the cause of banks' illiquidity. Arif and Anees (2012) indicated that banks would face illiquidity when deposits in banks are withdrawn unexpectedly. Distress in a certain bank can disturb bank panics among the public and will lead depositors at other banks to withdraw their funds (Abraham et al., 2020). The fear and loss of confidence among distressed depositors are the major causes of funds being abruptly withdrawn.

As a result of the bank deposits fragility as mentioned above, the government has implemented regulatory regulations through its central bank to safeguard bank deposits security for both banks and depositors. The Securities Commission of Bank Negara Malaysia (BNM) has put in place several regulations regarding Islamic deposits in Malaysia, among others, notably the Islamic Financial Services Act (IFSA 2013). Thus, for the regulatory factor, the independent variable in this research includes is the application of Section 2(1) of IFSA 2013 by Islamic bank.

2.8.1.1 Islamic Financial Services Act 2013 (IFSA 2013)

The Islamic Financial Services Act 2013 (IFSA 2013) came into force on March 22, 2013. By 2018, Malaysian financial institutions offering Islamic and conventional products and services must separate the licenses under the IFSA 2013. IFSA 2013 shows the government's commitment to Shariah compliance in Islamic financial products (Ishak, 2019). The IFSA 2013 was enacted to regulate and supervise Islamic banks and other Islamic financial institutions (IFI) practices. The IFSA 2013 repealed

the Islamic Banking Act of 1983 (IBA), Takaful Act of 1984, Payment System Act of 2003, and Exchange Control Act of 1953.

There was no apparent separation between deposit and investment accounts prior to IFSA 2013 (Budiman et. al., 2019). The Section 2(1) of IFSA 2013 redefines Islamic deposit, and the Islamic banks are required to separate the funds placed by the customers into Islamic deposit and investment accounts. The deposit account is risk-free since the principal is insured. In contrast, the investment account is vulnerable to loss because it is not protected or guaranteed (Budiman, et al., 2019). IFSA 2013's clear definition of the investment account marks a shift toward a risk-sharing approach. Previously, the separation between investment and savings accounts was neither substantive nor formal (Alaeddin et al., 2016). Islamic deposits are bound to principal guaranteed by Shariah contracts like *Qard*, *Wadiah*, and *Murabahah*. In contrast, Investment Accounts are constructed on *Mudharabah*, *Musharakah*, and *Wakalah* contracts that do not guarantee principal return or investment profit.

Maslahah (welfare or public interest) is one of the critical techniques in dealing with modern Islamic banking difficulties because some of them cannot be directly derived from ancient works of jurisprudence (Ishak, 2019). To achieve the maslahah concept, Islamic banks have played an important role in formulating rules and designing products (Ishak, 2019). IFSA 2013 requires Islamic banks to modify their product offerings and add risk-sharing instruments marketed on capital markets (Budiman et al., 2019). Even though the requirements of IFSA 2013 are to meet the objectives of Maqasid Shariah and for maslahah, the modifications in product offering

may affect a withdrawal risk by existing customers. For instance, withdrawal risk happens when investors withdraw their capital and migrate to other financial products (Budiman et al., 2019). As a result, Islamic banks may face bank runs and liquidity concerns.

The banking industry is definitely in a quantifiable general equilibrium economy (Díaz-Giménez et al., 1992), and the financial crisis is the core of the banking crisis (Schwartz 1986). The meaning of a banking crisis is wide-ranging, and it could refer to problems such as illiquidity and/or insolvency (Díaz-Giménez et al., 1992). A banking crisis is either bank runs, banking panic, or significant banking sector problems (Bordo, and London-lane, 2001), and it is usually the cause of banks' illiquidity. Arif and Anees (2012) indicated that banks would face illiquidity when deposits in banks are withdrawn unexpectedly. Distress in a certain bank can disturb bank panics among the public and will lead depositors at other banks to withdraw their funds (Abraham et al., 2020). The fear and loss of confidence among distressed depositors are the major causes of funds being abruptly withdrawn.

In theory, IFSA 2013's introduction of investment accounts should allow Islamic banks to use true sale credit financing products more freely (Rosly, 2017). In addition, the Act provides more flexibility in terms of investing requirements (Engku Ali & Oseni, 2017). Islamic banks are likely to adopt a new format for investment accounts that represents the actual performance for underlying assets or business activities (Hasan, 2016). Prior to the IFSA, there was no clear distinction between risk-sharing and risk-transfer activities in Islamic banks (Budiman, et al., 2019). For

example, murabahah investment accounts were ambiguously recognized as deposits and liabilities (Alaeddin et. al., 2016). Because the investment account holders own the credit sale risk, Islamic banks should be free of unprotected capital stress, and shareholders should be free of excessive capital costs (Rosly, 2017). Furthermore, due to the Act's non-guaranteed principal structure, investment accounts like mudharabah (partnership) are ineligible for deposit accounts (Ahmad & Ariff, 2020).

Islamic banks may face significant obstacles and costs in fulfilling those regulatory changes of IFSA 2013 since they must update their product portfolios to include risk-sharing products traded on capital markets. (Budiman et al., 2019). Still, IFSA 2013 could have unintended consequences for investors, such as lower profit payments and "withdrawal risk," which occurs when investors withdraw their cash and migrate to other financial products (Budiman et al., 2019). Hence, Islamic banks may experience bank runs, resulting in illiquidity issues.

As a result of the bank deposits fragility as mentioned above, the government has implemented regulatory regulations through its central bank to safeguard bank deposits security for both banks and depositors. The Securities Commission of Bank Negara Malaysia (BNM) has put in place several regulations regarding Islamic deposits in Malaysia, among others, notably the Islamic IFSA 2013. Thus, for the regulatory factor, the independent variable in this research includes is the application of the Section 2(1) of IFSA 2013 by Islamic banks.

2.8.2 Islamic Banking: Principles and Practices

The Islamic banking concept is a field of study that concentrates on the Shariah-compliant principles and practices of banking. The concept seeks to provide a context for comprehending the distinctive characteristics and operations of Islamic banks, as well as its influence on the economy and society. Islamic bank operations and practices are supposedly and profoundly inclined by the concept of Maqsid Shariah.

The prohibition of interest (riba) is one of the fundamental principles of Islamic banking, which also promotes risk sharing. Instead of charging interest on financing, Islamic banks use Shariah-compliant alternative financial instruments (Maali et al., 2006). The instruments consist of profit-sharing arrangements, such as mudharabah contracts, which depositors provide funds to the bank in return for a portion of the earnings created by the bank's investments. The Islamic financial instrument provides a guarantee that financial transactions are conducted in accordance with Islamic principles. The concept of justice and fairness in financial transactions is another important Islamic banking principle (Maali et. al., 2006). Islamic banks are intended to function in a fair and equitable way for all parties concerned. This involves ensuring that the bank's operations adhere to Islamic principles and that it treats its clients, including depositors and investors, fairly.

In addition to financial concerns, Islamic banks place a significant emphasis on social issues. They intend to positively impact society and fulfil their social obligations. Often, Islamic banks engage in charitable endeavors and support numerous social causes. In addition, they endeavor to maintain a positive Islamic

image by revealing their social initiatives and involvement in society by including corporate social disclosures in their annual reports in order to assure transparency and accountability (Maali et. al., 2006). These disclosures serve as a standard for comparing social accountability to the expectations established by Islamic principles. Previous researchers have developed disclosure indexes and conducted content analysis through Islamic banks' annual reports to assess the quantity and quality of corporate social disclosures (Maali et, al., 2006). This is essential because a negative corporate image can have economic consequences for businesses.

Regarding corporate governance, Islamic banks have a dual board structure comprising a Shariah supervisory board and a board of directors. This structure is exclusive to Islamic banks and functions to ensure Shariah compliance and efficient governance (Farag et. al., 2018). The Shariah supervisory board plays a vital role in guaranteeing compliance with Islamic principles by assuring Muslim stakeholders that their moral expectations are being met (Maali et al., 2006). According to past studies, the dual board structure can favorably impact Islamic banks' financial performance (Farag et. al., 2018). Scholars, regulators, and policymakers also comprehend the dynamics of agency relationships within Islamic banks to design effective governance mechanisms.

In summary, the core principles of Islamic banking are centered on the observance of Maqasid Shariah principles, the prohibition of usury, equitable treatment and integrity in financial transactions, efficient corporate governance, and societal accountability. These principles govern the operations and practices of

Islamic banks, assuring their adherence to Islamic principles and fulfillment of the expectations of their stakeholders.

2.8.3 Islamic Banking: The “Formative” Theory

Although there exists a substantial amount of literature that examines many facets of Islamic banking, such as its principles and operational procedures, the development of a comprehensive and unified specific theory pertaining to Islamic banking remains constrained (Farook et al., 2011). Hence, the topic of debate among scholars is on the presence of a comprehensive and cohesive theory pertaining to Islamic banking.

It is noteworthy to acknowledge that while a comprehensive theory of Islamic banking may not be present, there are diverse theories, concepts, and frameworks that enhance comprehension of different aspects of Islamic banking practices. Several theories and concepts have been identified in the literature, such as agency theory, stakeholder theory, corporate governance, corporate social responsibility, socio-political environment, and Islamic finance principles (Farook et al., 2011). The existing body of literature encompasses several ideas and concepts that are relevant to different aspects of Islamic banking. However, it is important to note that these theories and conceptions do not together constitute a comprehensive and mature theory that is specifically tailored to the field of Islamic banking. In brief, the current state of study and discourse around the principles and practices of Islamic banking reveals a lack of a comprehensive and unified theory in this field.

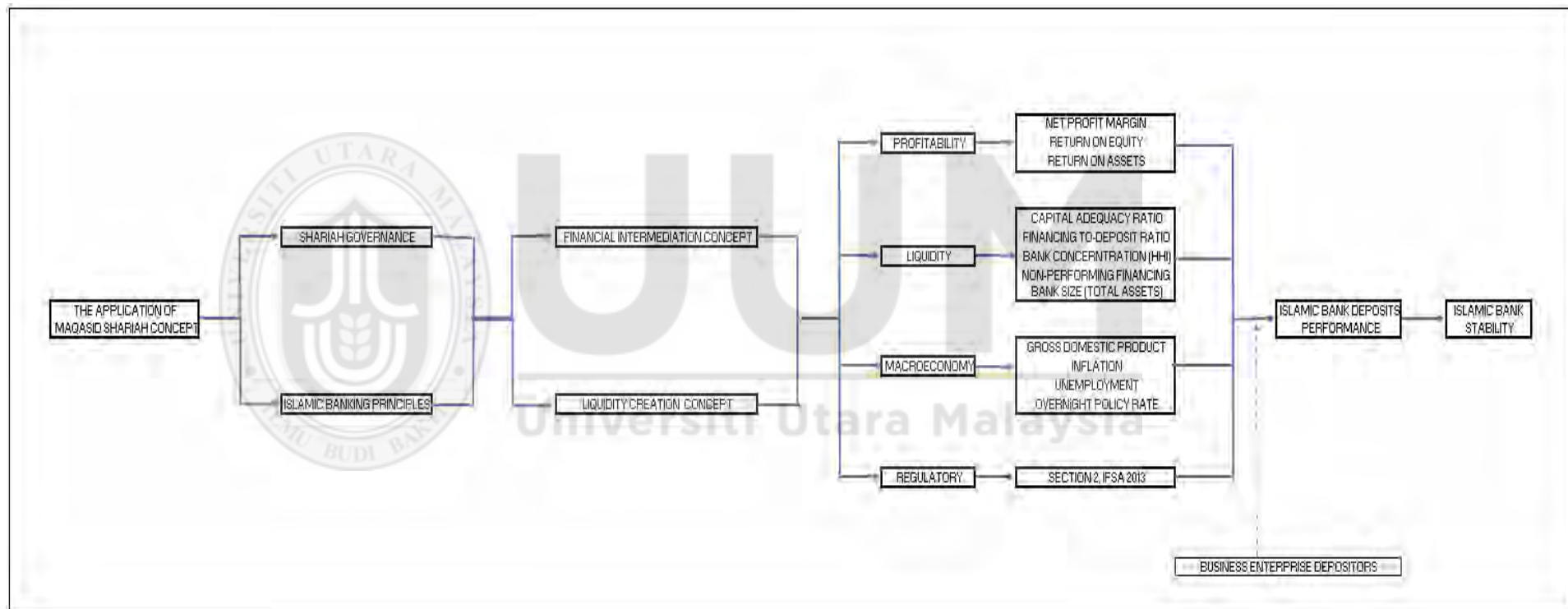
This research seeks to explore conventional theories such as financial intermediation and liquidity creation applies in the management of Islamic bank deposits, with regards to the practices of Maqasid Shariah compliance. Nevertheless, reviews from the existing literature are generally focuses on specific aspects such as Islamic banks as financial intermediary in social finance, stability of Islamic banks concerning to the performance of profitability and liquidity creation, but a comprehensive theory that encompasses all aspects of Islamic banking is yet to be recognized. Still, this research attempt does not constitute a comprehensive theory of Islamic banking.

However, this research able to develop a conceptual framework (see Figure 2.1) which constitutes the whole spectrum of related concepts and theories, regarding one major factor of Islamic banking: Islamic bank deposits performance. Consequently, it might be argued that the idea of Islamic banking theory is at a stage of development and subject to ongoing debate. Therefore, it is reasonable to conclude that the Islamic banking theory is still in its formative stages, not fully established and open to discussion.

2.9 Conceptual Framework

Figure 2.1

Conceptual Framework



2.10 Chapter Summary

The present chapter incorporates a comprehensive review of the existing literatures to analyze the determinants of performance in Islamic bank deposits. This research focuses on two key areas with three primary scopes. The first key area is internal factors related to the first scope which is the financial aspects of the bank, whereas the second key area is the external factors which covers another two main scopes: macroeconomic conditions, and regulatory considerations. Within the realm of Malaysian Islamic banks, there exists a scarcity of comprehensive references that thoroughly address all three scopes indicated.

Therefore, this research attempts to include additional factors within each primary scope that have been overlooked in previous research. These new variables include net profit margin, non-performing financing, financing to deposit ratio, bank concentration, bank size, overnight policy rate, the application of Section 2 IFSA 2013, and the customer type of business enterprises depositors as the moderator. Therefore, this chapter provides a comprehensive analysis of the limited body of research available on this subject matter. Hence, this research initiative aims to address a gap in both contextual and empirical evidence by examining the determinant factors that may influence the deposit performance of Islamic banks in Malaysia.

The existing scholarly work on the subject of Islamic bank deposits as financial intermediaries and their role in creating bank liquidity, particularly in relation to Maqasid Shariah application, is limited in breadth. In relation to the existing knowledge gap around Shariah compliance, Islamic banks continue to encounter

obstacles in effectively achieving the objectives of Maqasid Shariah. Moreover, in order to address the existing theoretical gap, this research not only examines the Islamic bank's function as a financial intermediary, but also investigates its position as a liquidity provider, specifically in the context of Islamic bank deposits. Therefore, drawing upon the extant literature examined in this chapter, the research tries to address the gaps in information, context, empirical evidence, and theory pertaining to the performance of Islamic bank deposits in Malaysia. In conclusion, this chapter presents a novel conceptual framework that serves as a thorough summary of the literature studies conducted with respect to the objectives outlined in Chapter One.



CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter explains the research methodology adopted in this research to answer all research questions and objectives stated in Chapter One.

The organization of this chapter starts with Section 3.1 describing the Research Design. It is followed by Section 3.2 Research Framework, 3.3 Empirical Model Specification, 3.4 Operational Definitions and Measurement, 3.5 Population and Sampling, Section 3.6 Data Collections Procedures, and Section 3.7 for Data Analysis Techniques. Finally, Section 3.8 for the Chapter Summary.

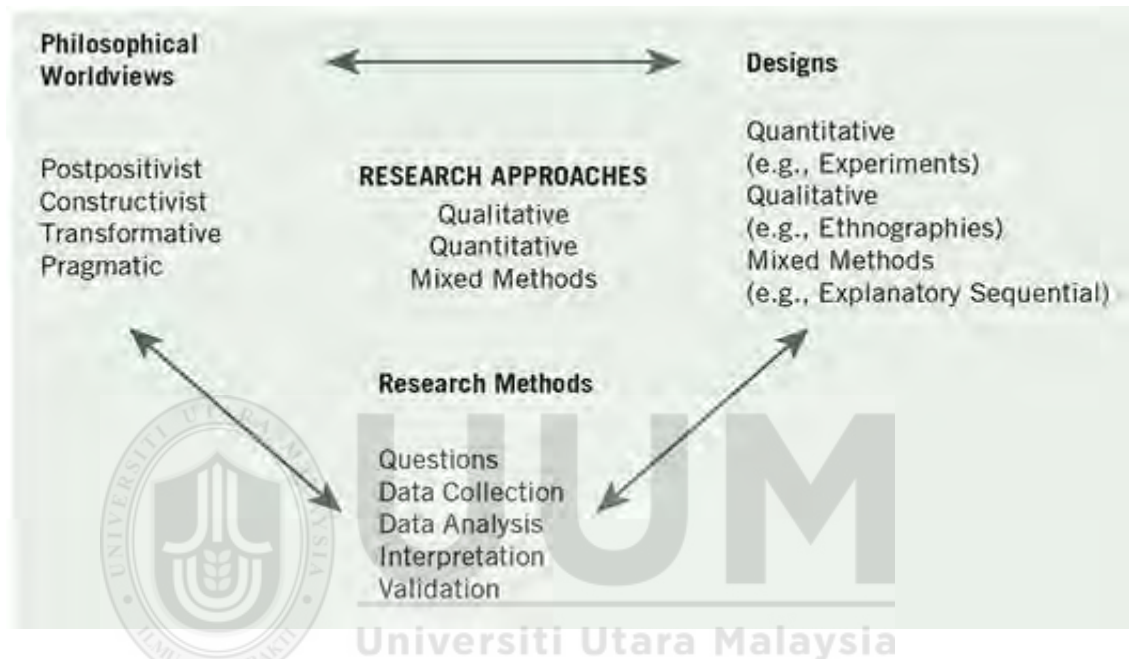
3.1 Research Approach and Research Design

According to Creswell and Creswell (2018) research approaches are the processes and strategies for doing research, including every aspect, from general principles to specific ways of gathering, analyzing, and interpreting data. Several decisions should play an essential role for the research approach to be successful, such as the researcher's philosophical views and the specific ways the data is collected, analyzed, and interpreted. Then, a research method is further selected based on the type of problem or issue under consideration, the personal experiences of the researchers, and the people who will be reading the study.

The following shows a framework for the research approach suggested by Cresswell and Creswell (2018) that shows the connections between philosophical worldviews, research designs, and research methods.

Figure 3. 1

Research Approach Framework



Note: By Creswell, J. W., & Creswell, J. D. (2023). *Research Design. Qualitative, Quantitative, and Mixed Methods Approaches* (6th Ed., p.40). SAGE Publications, Inc.

In the research process, the positivism paradigm used quantitative methods to verify its hypotheses (Healy & Perry, 2000). There are three basic principles of positivism. Firstly, science is the only valid knowledge and only facts are counted as knowledge object. Secondly, science and philosophy used the same method. Thirdly, the function of philosophy is to find the principles acceptable to all sciences. According to Park et.al. (2020) modern research in sciences mainly applied positivist thinking.

Furthermore, according to Cresswell and Creswell (2018), research based on postpositivism assumptions (also known as positivist/postpositivist studies and empirical science) is more likely to be quantitative than qualitative. This most recent term of postpositivism describes the thinking that emerged following positivism. It challenges the notion that there is a single absolute truth in knowledge (Phillips & Burbules, 2000). It also recognizes that one cannot be ultimately certain in any discoveries while studying human behavior and events.

Quantitative research is a study designed to examine objective ideas by analyzing the correlation between variables. The relationships between variables can be monitored using instruments, resulting in numerical data that can be examined using statistical processes. A final written report adheres to a predetermined framework comprising an introduction, literature and theory, methods, results, and discussion. Likewise, to qualitative methods, researchers who conduct quantitative studies also have presumptions about the ability to generalize and replicate the results, test hypotheses deductively, incorporate bias safeguards, and check for alternative or counterfactual explanations (Creswell & Creswell, 2023).

The belief of postpositivism is that causes most likely influence effects or outcomes. Thus, the issues investigated by postpositivists demonstrate the need to identify and evaluate the elements that influence outcomes. It aims to reduce the concepts to a small or focused group that hypotheses and research questions can test. Developing numerical methods to measure events and analyzing how individuals behave is critical for a postpositivist. Therefore, under the scientific method—as postpositivists believe a researcher should begin with a theory, collect evidence that either supports or disproves the hypothesis, make any necessary revisions, and conduct additional tests.

In brief, this research adopts the postpositivism paradigm and employs a quantitative analysis approach by examining one dependent variable (*Islamic bank deposits performance*), 13 independent variables (Islamic bank-specific financial factors; *net profit margin, return on assets, return on equity, non-performing financing, financing-to-deposit ratio, capital adequacy ratio, bank concentration, bank size*, and macroeconomic and regulatory variables; *gross domestic product, inflation, unemployment, overnight policy rate, and Section 2(1) of IFSA 2013*), and one moderating variable (*customer type - business enterprise depositors*).

3.2 Research Framework

Causal-comparative and correlational research is a nonexperimental quantitative study. Causal-comparative research compares two or more groups based on an observed cause (or independent variable). Correlational research uses correlational statistics to examine the relationship between variables or sets of scores (Creswell & Creswell, 2018). This research designs into a framework which have been refined into more advanced interactions between variables using hierarchical linear modeling and logistic regression approaches. Moreover, quantitative methods have included advanced experiments with multiple variables and treatments (e.g., repeated measure designs). Longitudinal data collection is frequently utilized in research designs to monitor the development of ideas and trends over time (Creswell & Creswell, 2018).

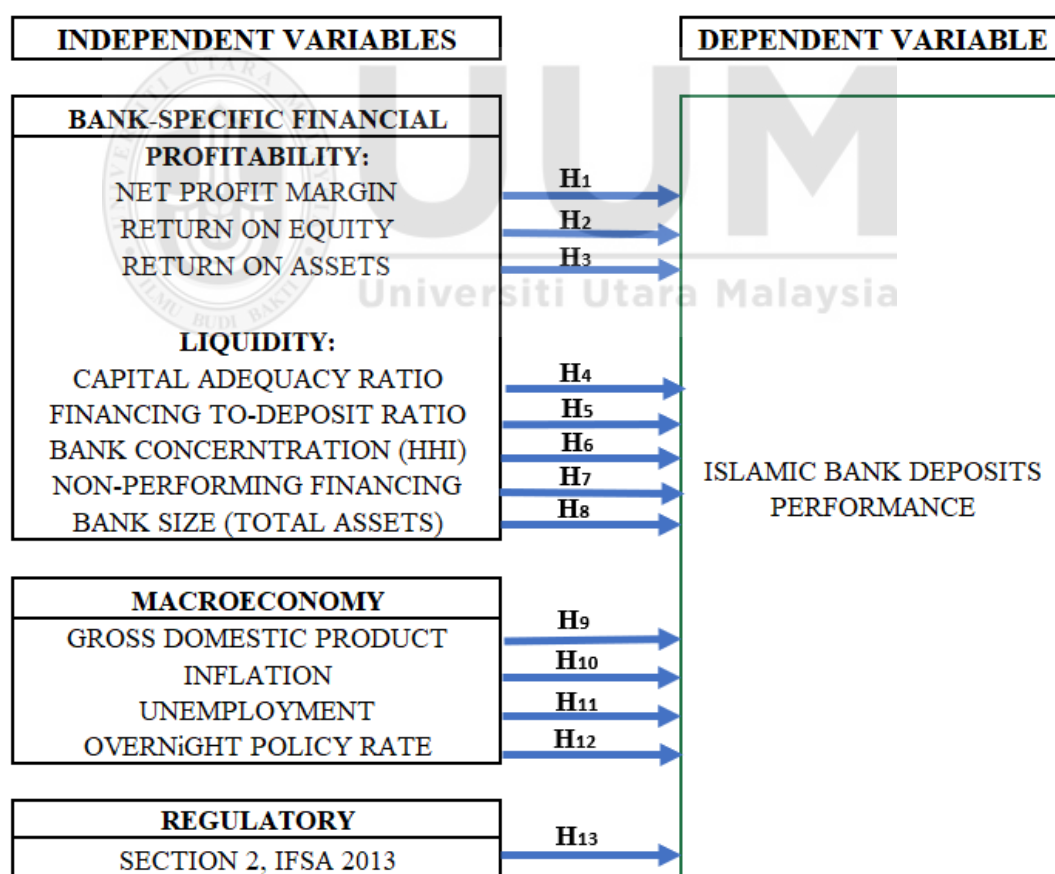
According to John (2008), the best way to describe the relationship between independent variables and dependent variables is to form the research model that is based on regression statistical techniques. In this research, correlation and regression describe the relationship between the dependent variable (DV) of Islamic bank deposit

performance with its 13 independent variables (IV) and one moderating variable. Therefore, the framework for this research is illustrated accordingly in Figure 3.2 and Figure 3.3 below.

- i. Figure 3.2 illustrates the first research framework which examines the relationship between dependent variable of Islamic bank deposits performance with 13 independent variables comprises of two internal factors (profitability and liquidity) and two external factors (macroeconomic and regulatory).

Figure 3. 2

Research Framework I for Islamic Banks Deposit Performance

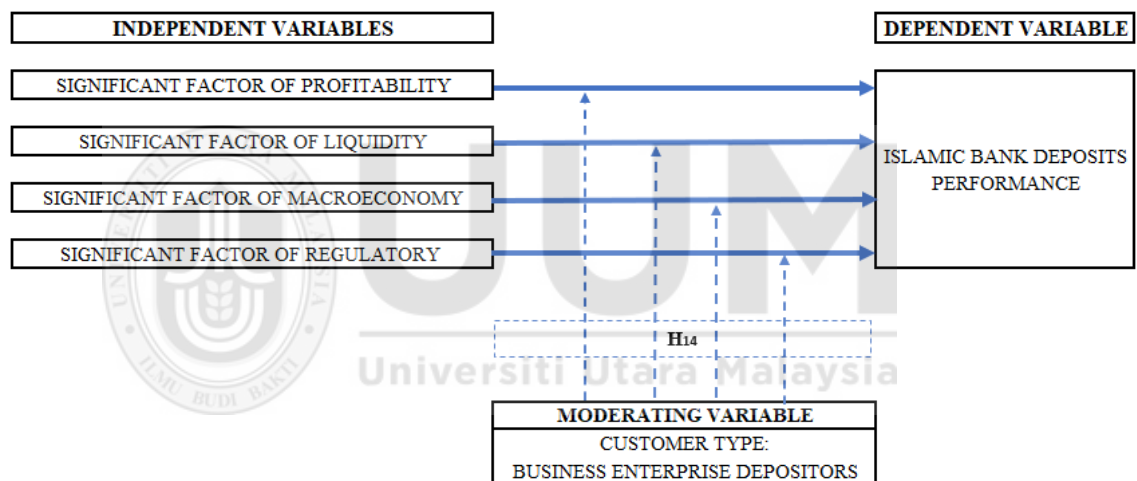


- ii. Following the first examination using the first research framework in Figure 3.2, the study continues with the second examination to further examines only the

significant IVs resulted from the first research framework, and the effects of moderating variable. Thus, Figure 3.3 illustrates the second research framework which examines the relationship between the DV, significant IVs and the moderating variable of Customer Type that is Business Enterprise Depositors.

Figure 3. 3

Research Framework II for Islamic Banks Deposit Performance



3.3 Empirical Model Specification

As for the structure of analysis, it begins with estimating the first statistical model of the expected association between bank-specific financial determinants and Islamic bank deposits. This is followed by assessing the second model of the expected association between macroeconomic and regulatory determinants and Islamic bank deposits. Then, the third model of the expected association between moderating variable, the significant independent variable, and the dependent variable of Islamic

bank deposits. The statistical analysis starts with descriptive, skewness, and kurtosis of the examined data, followed by running the correlation and regressions analysis. This empirical chapter performs further sensitivity tests to complete the study and assess the reliability of the findings.

In order to examine the determinants of Islamic banks deposit performance, three empirical model is specified and analyzed as the following:

3.3.1 Estimating the Bank-Specific Financial Determinants of Islamic Bank Deposits

The first empirical model is subjected to answer the first objective in this research regarding the relationship between the independent variables of bank-specific financial determinants with the dependent variable of Islamic bank deposits. The first objective of this research is formed by the hypotheses developed from the literature reviews in Chapter Two and presented by the following panel data regression model.

$$IBD_{it} = \beta_0 + \beta_1 NPM_{it} + \beta_2 ROA_{it} + \beta_3 ROE_{it} + \beta_4 CAR_{it} + \beta_5 HHI_{it} + \beta_6 FDR_{it} + \beta_7 NPF_{it} + \beta_8 BankSize_{it} + \varepsilon_{it} \dots\dots\dots (1)$$

Where, β_0 = constant

i = bank

t = time / period

ε_{it} = Error term of bank (i) in time (t)

IBD_{it} = Islamic Banks Deposit

$\beta_1 NPM_{it}$ = Net Profit Margin

$\beta_2 ROA_{it}$ = Return on Asset

$\beta_3 ROE_{it}$ = Return on Equity

$\beta_4 CAR_{it}$	=	Capital Adequacy Ratio
$\beta_5 HHI_{it}$	=	Bank Concentration: Herfindahl– Hirschman Index (HHI)
$B_6 FDR_{it}$	=	Financing to Deposit Ratio
$B_7 NPF_{it}$	=	Non-performing Financing
$B_8 BankSize_{it}$	=	Bank Size

3.3.2 Estimating the Macroeconomics and Regulatory Determinants of Islamic Bank Deposits

The second empirical model is subjected to answer the second objective in this research regarding the relationship between the independent variables of macroeconomic and regulatory determinants with the dependent variables of Islamic bank deposits. The second objective of this research is formed by the hypotheses developed from the literature reviews in Chapter Two and presented by the following statistical model.

$$IBD_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 INF_{it} + \beta_3 UNEMPLOY_{it} + \beta_4 OPR_{it} + \beta_5 S2IFSA_{it} + \varepsilon_{it} \dots \dots \dots (2)$$

Where, β_0 = constant

i = bank

t = time /period

ε_{it} = Error term of bank (i) in time (t)

IBD_{it}	=	Islamic Banks Deposit
B_1GDP_{it}	=	Gross Domestic Product
B_2INF_{it}	=	Inflation
$B_3UNEMPLOY_{it}$	=	Unemployment
B_4OPR_{it}	=	Overnight Policy Rate
$B_5S2IFSA_{it}$	=	Section 2, IFSA 2013

3.3.3 Estimating the Business Enterprises Depositors as Moderating Variable Between Independent Variable and Dependent Variable of Islamic Bank Deposits

This third empirical model is subjected to answer the third objective in this research regarding the relationship between the significant independent variables and the moderating variable, with the dependent variables of Islamic bank deposits. This research incorporates business enterprise depositors as a moderating variable to better understand the determinants of Islamic bank deposits. The moderation approach is to comprehend how independent variables function when the moderator imposes conditions on their relationship with the dependent variable. The statistical model of a moderated effect is an interaction between the independent variables and the moderator variable. The significance of business enterprises depositors as moderating variable based on the statistical analysis presented in Chapter Four as well as supported by the reviews on the literatures in Chapter Two.

The moderating variable for this study is Business Enterprise Depositors (BED). BED is one the four types of depositors of Malaysian Islamic banks. The remaining three are individuals, government and others. BED is selected to be the

moderating variable because it represents the largest depositor among the four depositors (Annual Report of Islamic banks). By the size of the deposits, it is inferred that deposits from BED strengthen the deposits performance of Islamic banks.

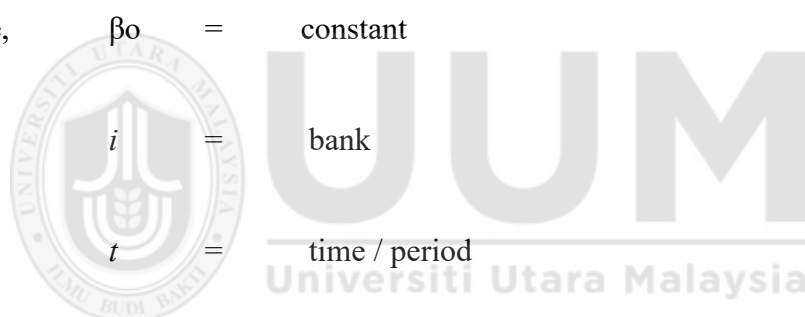
According to Hair et. al. (2010), the moderating model is as follow;

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_1X_2.$$

Therefore, the third empirical model is as the following:

$$IBD_{it} = \beta_0 + \beta_1NPM_{it} + \beta_2BEDEPOSITOR_{it} + \beta_3NPM_{it} * BEDEPOSITOR_{it} + \varepsilon_{it} \dots \dots (3)$$

Where,



ε_{it} = Error term of bank (i) in time (t)

IBD_{it}	=	Islamic Banks Deposit
B_1NPM_{it}	=	Net Profit Margin
$B_2BEDEPOSITOR_{it}$	=	Business Enterprises Depositors
$B_3NPM_{it} * BEDEPOSITOR_{it}$	=	Net Profit Margin* Business Enterprises Depositors

3.4 Operational Definition and Measurement

The operational definition and measurement for each variable and its' source is illustrated in the following Table 3.1.

Table 3. 1

Operational Definition, and Measurement of Variables

Variables	Operational Definition and Measurement
Islamic Bank Deposit	The volume Islamic bank deposits are taken from the balance of total deposits in annual financial reports of Islamic banks in Malaysia. The total amount of Islamic deposit generates from demand deposits, saving deposit, special Investment deposits, negotiable instruments deposits and other deposits. Measurement: Natural logarithms of total Islamic bank deposits.
Net Profit Margin	Net Profit Margin (NPM) is a component of the profitability ratio, which measures a business's ability to generate a profit. Measurement: $\text{NPM} = \text{Net Income (profit before extraordinary items, taxes, and Zakat)} / \text{Gross Income (Total Distributable Income)}$
Return on Assets	Return on Assets is a financial indicator that calculates net income earned relative to total assets to determine a company's profitability. It is an essential measure of a company's efficiency in generating profits from its assets. Measurement:

	ROA = Net Income (profit before extraordinary items, taxes, and Zakat) / Total Asset
Return on Equity	Return on Equity (ROE) is a financial metric utilized to evaluate an organization's profitability and efficacy in generating returns on its shareholders' equity. Measurement: ROE = Net Income (profit before extraordinary items, taxes, and Zakat) / Total Equity
Capital Adequacy Ratio	The capital adequacy ratio (CAR) measures a bank's available capital in relation to risk-weighted credit exposures. Measurement: CET1 @Tier 1 (CAR is computed by bank after taking into account the credit, market and operational risk)
Bank Concentration -Herfindahl-Hirschman Index (HHI)	The HHI is the level of ownership concentration within a market structure, in relation to the impact of competition among banks in the Islamic banking industry. Measurement: The measure of HHI by summing the squares of the proportion of total deposits among all the assessed Islamic banks. $HHI = \sum_{i=1}^n \left(\frac{\sum \text{Deposits}_i}{\sum \text{Market Deposits}_t} \right)^2$
Financing to Deposit Ratio	The financing to deposit ratio is used to evaluate the extent to which an Islamic bank relies on external sources relative to its deposit base for supporting its financing operations. Measurement: Total Shariah financing/Total Islamic bank deposits

Non-performing Financing	Non-performing financing (NPF) describes the financing or funding supplied by Islamic banks that is not being returned in accordance with the agreed-upon conditions. Measurement: $\text{NPF} = \frac{\text{Non-performing financing}}{\text{Total financing}}$
Bank Size	The size of the bank is based on the total assets of Islamic bank. Measurement: Natural logarithms of the total assets of Islamic bank.
Inflation	Inflation occurs when the price level of an economy rises. Inflation is instrumented using percentage change in Customer Price Index Measurement: Customer Price Index as proxy
Gross Domestic Product	Gross domestic product is a measure of the size and performance of the economy that is adjusted for price changes Measurement: GDP at Purchasers Prices - by Type of Expenditure at Current Prices
Unemployment	The unemployment rate is derived by dividing the number of unemployed by the total number of workers. Measurement: Unemployment rates by Department of Statistics Malaysia
Overnight Policy Rate	The overnight policy rate (OPR) is a key tool used by central banks to implement monetary policy. It is the primary monetary policy instrument Bank Negara Malaysia (BNM) uses to influence the money supply, inflation, and economic growth. Measurement:

Overnight Policy Rates by Bank Negara Malaysia	
Section 2(1) IFSA 2013	A sum of money received or paid according to Shariah regulations is referred to as an "Islamic deposit." A Shariah-compliant account into which money is paid and received for investment purposes is referred to as an "investment account". Measurement: By using dummy variable (before and after the implementation of the requirement Section 2(1) IFSA 2013 by Islamic banks). The dummy measurement uses a binary variable, wherein a value of "1" indicates that the Islamic bank is applying the requirement of Section 2(1) IFSA 2013, while a value of "0" indicates that it is not applying the requirement.
Customer Type - Business Enterprise	Deposits are funds placed in a bank by a business client or depositor and/or for safekeeping. Measurement:
Depositors	Natural logarithm of the total amount of Islamic deposit generates from enterprise depositors.

3.5 Population and Sampling

The type of study for this research is quantitative method and the unit of analysis is the Islamic bank in Malaysia. The population of Islamic banks in Malaysia is 16 which comprises of 5 foreign banks and 11 local banks. The sampling frame for this study is based on the 16 Islamic banks in Malaysia.

3.6 Data Collection Procedures

The quantitative study examines and explores the determinants of banks deposit performance among 16 Islamic banks of Malaysia. The study period covers from 2000 until 2021. The data is limited to secondary data which gathered from the Islamic banks' Annual Report, Bank Negara Malaysia, World Bank, Department of Statistics Malaysia (DOSM), IFSA 2013, and other explicitly specified sources. The researcher computes the financial data ratios of Islamic banks by utilizing the actual data from Financial Reports of Islamic banks in Malaysia. The description about the source of data collection for each variable is shown in Table 3.2 below.

Table 3. 2
The Sources of Data Collection for Each Variable

Variables	Description	Source
Islamic Bank Deposit Performance (IBDP)	Ratio	Annual Report
Net Profit Margin (NPM)	Ratio	Annual Report
Return on Assets (ROA)	Ratio	Annual Report
Return on Equity (ROE)	Ratio	Annual Report
Capital Adequacy Ratio (CAR)	Ratio	Annual Report
Bank concentration. - Herfindahl–Hirschman Index (HHI)	Ratio	Annual Report
Financing to Deposit Ratio (FDR)	Ratio	Annual Report
Non-performing financing (NPF)	Ratio	Annual Report
Bank Size (Total Assets)	Ratio	Annual Report

Gross Domestic Product (GDP)	Aggregate Economic	DOSM
Inflation (INF)	Consumer Price Index	DOSM
Unemployment (UNE)	Aggregate Economic	DOSM
Overnight Policy Rate (OPR)	Ratio	Bank Negara Malaysia
Section 2(1) of IFSA 2013	Dummy Variable	IFSA 2013 & Bank Negara Malaysia
Customer Type (Business Enterprise Depositors)	Ratio	Annual Report

3.7 Data Analysis Techniques

In this study, the data analysis uses the Stata econometric package version 17 to conduct the empirical analysis. To assess the robustness of the data, as an econometric method, several essential statistical approaches, and tests, such as descriptive statistics, the skewness and kurtosis test for examining the data distribution, and the Pearson correlation matrix test to assess the multicollinearity between examined variables. Beforehand, data screening is performed to identify outliers using a scatter plot, and the results demonstrate that the data is normally distributed. Furthermore, the Breusch-Pagan LM, Chow, and Hausman tests are employed to check the fittingness of using panel data regressions with either pooled ordinary least square, fixed, or random effects.

Accordingly, the empirical model in this chapter measures the determinants of the Islamic bank deposits of the examined Islamic banks by utilizing panel data regressions with ordinary least square, fixed, or random effects models with robust standard error. It should be noted that for the sensitivity test, the research uses an additional test by using a cluster option to cater the heteroskedasticity and serial correlation problems. In addition, panel data regressions with firm effects is conducted to confirm the firm-specific effect results. Thus, the statistical findings in this chapter may provide an answer to the research objectives.

3.7.1 Descriptive Analysis

The purpose of descriptive analysis is to describe the frequency distribution of the data including measurements of central tendency. Descriptive analysis computes the result of means, standard deviations, maximum, minimum and values of the variables in this study.

3.7.2 Diagnostic Test

The objective of diagnostic test is to ensure the quality of data. For this study, the quality test are by (i) detecting outliers; (ii) multicollinearity test is to know the correlation between variables by using the tolerance value and variance inflation factor; (iii) normality test is to ensure that the data and variables are normally or not normally distributed; (iv) heteroscedasticity test is to ensure the variance is unequal; and (v) auto-correlation is to test the correlation between members of sequence of observations ordered in time for time series data.

3.7.3 Panel Data Analysis

Panel data analysis is a statistical method used to analyze data that includes observations over multiple time periods for the same entities, such as individuals, firms, or countries. This method combines cross-sectional data (different entities at a single point in time) with time-series data (the same entity at different points in time), providing a richer data set.

There are several types of models used in panel data analysis. The Pooled OLS (Ordinary Least Squares) model treats the data as if it were a single large cross-section, ignoring the time dimension and any entity-specific effects. The Fixed Effects (FE) model controls for unobserved characteristics that vary across entities but remain constant over time, by using entity-specific dummy variables. The Random Effects (RE) model assumes that these unobserved characteristics are random and uncorrelated with the independent variables, making it more efficient than the fixed effects model if this assumption holds.

Panel data analysis has several advantages. It controls for individual heterogeneity, providing a more accurate analysis by considering the unique characteristics of each entity. It offers more informative data by combining cross-sectional and time-series aspects, leading to more variability and less collinearity. Additionally, it is better suited for studying the dynamics of change, allowing for the detection and measurement of effects that are not visible in pure cross-sectional or time-series data.

However, there are challenges, such as dealing with missing data and choosing the appropriate model. Missing observations can complicate the analysis, and deciding

between fixed effects and random effects models often requires statistical tests, like the Hausman test.

In practice, panel data analysis involves several steps. First, data is collected and prepared in a panel format. Descriptive statistics are then used to explore the data. The next step is model selection, where the choice between pooled OLS, fixed effects, and random effects models is made based on theoretical considerations and statistical tests. Once the model is estimated, the results are tested for validity, and finally, the findings are interpreted in the context of the research question.

3.8 Chapter Summary

This chapter describes the research methodology used in this research in order to test all the variables that have been developed previously. This chapter represented the analytical framework and the summary of variables used in this study as well as the model formulated to test the objectives. In addition, this chapter provides critical information on data sources and collection methods, as well as sampling design and data analysis methodologies.

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.0 Introduction

While Chapter Two discussed the literature review and Chapter Three for methodology, Chapter Four presented the discussions on findings. This chapter attempts to assess the determinants of Islamic bank deposits' results through a dynamic panel data regressions model, which helps to locate the potential factors that may affect the deposits of Islamic banks. In such an attempt, this chapter emphasizes external and internal factors. Moreover, a moderating variable is also taken into consideration, which is business enterprise depositors.

This chapter uses the Stata econometric package version 17 to conduct the empirical analysis. To assess the robustness of the data, as an econometric method, several essential statistical approaches, and tests, such as descriptive statistics, the skewness and kurtosis test for examining the data distribution, and the Pearson correlation matrix test to assess the multicollinearity between examined variables. Beforehand, data screening is performed to identify outliers using a scatter plot, and the results demonstrate that the data is normally distributed. Furthermore, the Breusch-Pagan LM, Chow, and Hausman tests are employed to check the fittingness of using panel data regressions with either pooled ordinary least square, fixed, or random effects. Accordingly, the empirical model in this chapter measures the determinants of the Islamic bank deposits of the examined Islamic banks by utilizing panel data regressions with ordinary least square, fixed, or random effects models with robust standard error. It should be noted that for the sensitivity test, the research uses an

additional test by using a cluster option to cater the heteroskedasticity and serial correlation problems. In addition, panel data regressions with firm effects is conducted to confirm the firm-specific effect results. Thus, the statistical findings in this chapter may provide an answer to the research objectives.

As for the structure of the chapter, it begins with estimating the first statistical model of the expected association between bank-specific financial determinants and Islamic bank deposits. This is followed by assessing the second model of the expected association between macroeconomic and regulatory determinants and Islamic bank deposits. Then, the third model of the expected association between moderating variable, the significant independent variable, and the dependent variable of Islamic bank deposits. The statistical analysis starts with descriptive, skewness, and kurtosis of the examined data, followed by running the correlation and regressions analysis. This empirical chapter performs further sensitivity tests to complete the study and assess the reliability of the findings.

4.1 Estimating the Bank-Specific Financial Determinants of Islamic Bank Deposits

This subsection presents the analysis of the first statistical model in this research. The study is based on the examined 16 Islamic banks in Malaysia, consisting of 11 local Islamic banks and five foreign ones. The analysis includes an initial descriptive analysis of the reviewed data, skewness and kurtosis statistics, Pearson correlation matrix test, and panel data regressions.

This section is subjected to answer the first objective in this research regarding the relationship between the independent variables of bank-specific financial determinants with the dependent variable of Islamic bank deposits. The first objective of this research is formed by the hypotheses developed from the literature reviews in Chapter Two and presented by the following panel data regression model.

$$IBD_{it} = \beta_0 + \beta_1 NPM_{it} + \beta_2 ROA_{it} + \beta_3 ROE_{it} + \beta_4 CAR_{it} + \beta_5 HHI_{it} + \beta_6 FDR_{it} + \beta_7 NPFI_{it} + \beta_8 BankSize_{it} + \varepsilon_{it} \dots\dots\dots (1)$$

Where,	β_0	=	constant
	i	=	bank
	t	=	time / period
	ε_{it}	=	Error term of bank (i) in time (t)
	IBD_{it}	=	Islamic Banks Deposit
	$\beta_1 NPM_{it}$	=	Net Profit Margin
	$\beta_2 ROA_{it}$	=	Return on Asset
	$\beta_3 ROE_{it}$	=	Return on Equity
	$\beta_4 CAR_{it}$	=	Capital Adequacy Ratio
	$\beta_5 HHI_{it}$	=	Bank Concentration: Herfindahl– Hirschman Index (HHI)
	$\beta_6 FDR_{it}$	=	Financing to Deposit Ratio
	$\beta_7 NPFI_{it}$	=	Non-performing Financing
	$\beta_8 BankSize_{it}$	=	Bank Size

4.1.1 Descriptive Statistics

Table 4. 1

Descriptive statistics

Variable	Total Islamic Deposit	NPM	ROA	ROE	CAR	HHI	FDR	NPF	Bank Size
Mean	16.184	-1.382	0.006	0.120	0.162	0.020	0.909	0.032	16.612
Std. dev.	1.580	19.383	0.021	0.298	0.195	0.060	0.366	0.041	1.115
Min	0.000	-302.80	-0.291	-0.657	-0.028	0.000	0.000	0.000	12.582
Max	19.006	2.729	0.066	4.597	2.104	0.419	2.792	0.232	19.383

Regarding the descriptive statistics of the examined variables, Table 4.1 shows that the total of Islamic bank deposits in Malaysia ranges from 0.000 to 19.006 (RM0 to RM179,556,414 million). The minimal value of 0.000 reflects the volume of Islamic deposits in certain banks that are zero, since it is at the start of formation or the first year of operations that the Islamic banks begin with zero amount of Islamic deposits. The average amount of Islamic bank deposits is 16.184 (RM10,681,245 million) with a standard deviation of 1.580, reflecting that the data dispersion is quite farther in relation to the mean.

The net profit margin (NPM) ranges between -302.80 and 2.729, with a mean value of -1.382. The -302.80% represents the value of MBSB Bank Berhad (formerly known as Asian Finance Bank) during its first year of operation in 2006 with a huge net loss margin. In contrast, the maximum value of 2.729% represents the NPM for the Kuwait Finance House in 2011. The high standard deviation of 19.383 in relation to the mean implies that NPM dispersions are spread out largely among 16 Islamic

banks in the 22 years examined period. The reasons behind the high score of standard deviation of NPM are the market placement, number of branches, type of banks (local or foreign), bank size and the products or services offered to the customers, which affected the profit making by Islamic banks.

The return on assets (ROA) scores a minimum ratio of -0.291 and the maximum ratio of 0.066, with a mean value of 0.006. The standard deviation is very low in relation to the mean, which is at 0.021, signifying that the ROA among all Islamic banks is quite in the same range and can be considered to perform in the long run. On the other hand, the return on equity (ROE) statistic represents more stable results as compared to ROA. The ROE scores a minimum ratio of -0.657 and the maximum ratio of 4.597, with a mean value of 0.120. The standard deviation is at 0.298 in relation to the mean, suggesting that the ROE of Islamic banks are steadier indicator of business profitability than the ROA.

Concerning the capital adequacy ratio (CAR), the statistics show the average value of 0.162 or 16.2% indicates that Islamic banks in Malaysia are well-capitalized, which is higher than the 8% required by BASEL III international standards. The minimum and maximum values are scores between -0.028 and 2.104, while the standard deviation score is at 0.195 in relation to the mean. These results suggest that the CAR of Islamic banks in Malaysia is satisfying and manageable. With regard to the bank concentration: Herfindahl-Hirschman Index (HHI), the minimum value is 0.000, and the maximum value is 0.419, while the mean value scores at 0.020. These HHI statistical analysis show that bank concentration on Islamic deposits-taking in the

Islamic banking market is at a broader range and lower market concentration among all Islamic banks, due to the Islamic banks' various initiatives and strategies regarding market entry and placement in Malaysia. However, the standard deviation at a low level of 0.060 in relation to the mean of 0.020 suggests that the HHI is clustered around the mean with a lower variation.

Relating to financial to deposit ratio (FDR), the minimum value is 0.000 and the maximum value is 2.792, while the standard deviation is at a low value of 0.366. The FDR average is 0.909, meaning the Islamic banks in Malaysia are able to offer 0.909 times more than the volume of deposits. These ratios imply that the financing commitments compared to the deposits taken by the bank are sufficient and controllable. Regarding non-performing financing (NPF), the scores are between 0.000 and 0.232, with a mean value of 0.032, suggesting a bearable size of bad financing. Finally, the independent variable of bank size represents the bank's total assets. The statistics show the average value of total assets of Islamic banks is 16.612 (RM16,387,018 million) and ranges between 12.582 (RM291,268 million) and 19.383 (RM261,776,070 million), reflecting the variations in size amongst examined Islamic banks throughout the study period.

4.1.2 Skewness and Kurtosis Statistics

As part of the empirical process, some essential statistical tests are conducted to examine the validity of the data used before conducting the panel data regression tests. The skewness and kurtosis standards are performed to examine the data's departure from normality magnitude. The analyzed variables are normally distributed where the

skewness results are between 0.000 and 0.236, and the coefficient of kurtosis is from 0.000 to 0.040, as presented in Table 4.2. The skewness values for data with a normal distribution, skewness, and kurtosis values between -2 and +2 are considered normal and acceptable (George & Mallery, 2010; Hair et. al., 2010).

Table 4. 2

Skewness and Kurtosis Statistics

Variable	Total Islamic Deposit	NPM	ROA	ROE	CAR	HHI	FDR	NPF	Bank Size
Skewness	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.236
Kurtosis	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040

4.1.3 Pearson Correlation Matrix Test

As a result of the normally distributed data, this research applies the Pearson correlation matrix to investigate the multicollinearity between examined variables.

Table 4. 3

Pearson Correlation Matrix Test

	Total Islamic Deposit	NPM	ROA	ROE	CAR	HHI	FDR	NPF	Bank Size
Total Deposit	1								
NPM	0.673***	1							
ROA	0.322***	0.222***	1						
ROE	0.159**	0.063	-0.074	1					
CAR	0.336***	-0.051	-0.520***	-0.155*	1				
HHI	0.100	0.026	0.041	0.087	-0.068	1			
FDR	0.142**	0.176*	0.129**	-0.057	-0.200*	-0.200*	1		
NPF	-0.08	0.063	-0.127**	0.161*	-0.067	0.537***	-0.158**	1	

Bank									
Size	0.860***	0.266***	0.305***	0.159**	-0.402***	0.026	0.249***	-0.190*	1

Notes: * $p < 0.01$, ** $p < 0.05$, *** $p < 0.001$

The Pearson correlation matrix values shown in Table 4.3 demonstrate satisfactory results within the scope of this study. No multicollinearity problem if the correlation values are equivalent to or lower than 0.8 (Brooks, 2008); Haniffa & Cooke, 2005); J. Li et al., 2008). Additionally, according to Midi et. al. (2010) multicollinearity occurs when there is a high degree of correlation between two or more explanatory variables, and the general rule of thumb for this is when the coefficient result is greater than 0.8 or 0.9. Although the variances and standard errors of the regression coefficient estimates may rise, the existence of multicollinearity is anticipated to have a minimal influence on the overall fit of the regression equation. Consequently, the accuracy of forecasting and prediction is likewise anticipated to be little influenced. Moreover, the most effective logistic regression models are characterized by high correlations between the predictor and outcome variables while exhibiting minimum correlations among the predictor variables (Midi et. al., 2010). Hence, the examination of this study continues despite the presence of a connection between bank size and total deposits that are slightly above the threshold of 0.80 (Coeff. = 0.86). In summary, all examined bank-specific financial variables are perceived as not highly correlated.

4.1.4 Panel Data Regressions with Fixed Effects Model: Measuring the Bank-Specific Financial Determinants of Islamic Bank Deposits

Based on the Hausman test (p -value = 0.000, significant level at 1%), as presented in Table 4.4, the null hypothesis is rejected, signifying that the coefficient difference is systematic and the fixed effect model is the most suitable for the examined data.

Table 4.4 reports the result of the panel data regressions with a fixed effects model of the relationship between Islamic bank deposits and independent variables in testing the developed hypotheses. The results of fixed effects regressions show that the overall model is significant at $p < 0.01$ (F-test = 0.000) with an R -square equal to 0.9652, indicating the model's high level of goodness fit.

Table 4. 4

Panel Data Regressions with Fixed Effects Model: Measuring the Bank Specific - Financial Determinants of Islamic Bank Deposits

Total Islamic Deposit	Coef.	Std.err	t-value
NPM	0.040	0.001	46.09***
ROA	-0.166	0.927	-0.18
ROE	-0.050	0.052	-0.96
CAR	-0.080	0.112	-0.71
HHI	0.832	0.339	2.45**
FDR	-0.298	0.056	-5.31***
NPF	0.320	0.545	0.59
Bank Size	1.013	0.026	39.24***
Constant	-0.319	0.427	-0.75
Observations	258		
R-Square	0.9652		
Number of banks	16		
Prob>F	0.0000***		
Hausman test	0.0000***		

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

As presented in Table 4.4, the fixed effects regressions results show that the association between net profit margin (NPM) and Islamic bank deposits is positive and statistically significant at 1% (t -value = 46.09; Coeff. = 0.040). This is the first attempt in academic research to utilize the relationship between NPM with the creation of bank deposits, specifically in Islamic banks. Consistent with hypothesis 1, such results signify that Islamic banks generate higher Islamic bank deposits with higher NPM. This result is supported by Lisnawati and Novianty (2022) which reported that Islamic banks use profit-sharing mechanisms to gather more deposit money.

The NPM is the most commonly used tool to measure a bank's profitability since it is the primary traditional function of bank's major performances. NPM can describe the high or low level of effectiveness in a bank's management, as it can be proven by the financial report performance (Fatmawatie et. al. 2021). The studies Fah and Hassani (2014) reported positive and significant relationships between deposits and banks' profitability. Still, the authors found the volatility of deposits does not significantly impact banks' profit efficiency in Malaysia. However, Fah and Hassani (2014) suggested that investors and depositors may use a bank's profitability and performance outcomes to guide their decision-making regarding the efficacy of current strategies, and areas of improvement and identify promising avenues for growth. Therefore, in line with the theory of financial intermediation, these finding highlights how crucial it is for Islamic banks as a financial intermediary to consistently maintain a positive and encouraging net profit margin to keep existing depositors and draw in new depositors.

Herfindahl-Hirschman Index (HHI) has been frequently employed in past literature to describe competitiveness and deposit market concentration in the banking sector (Ali et al., 2020; Maji & Hazarika, 2018; Sijabat et al., 2020; Xia et al., 2020). However, a study on the relationship between HHI and Islamic bank deposits is scarce in the literature. Consistent with hypothesis 5, the result of HHI demonstrates a positive and significant 5% association level with Islamic bank deposits (t -value = 2.45; Coeff. = 0.832). This finding parallels with studies by Ab Rahman et.al. (2021) and Kamran et. al. (2019) that measured the HHI by summing the squares of the proportion of total deposits among all the assessed banks.

Regarding the affiliation between the Islamic deposits' market concentration and liquidity creation, the empirical results in Table 4.4 imply that an increase of 1% in the HHI causes an expansion of the liquidity creation in Islamic bank deposits by 0.83 %. Thus, the empirical results of fixed effect regressions indicate that a greater concentration of Islamic bank deposits in the banking market structure tends to improve the liquidity creation of Islamic deposits. Accordingly, the obtained results align with the financial intermediation theory, as applying a higher market structure would promote a bank placement attitude. Therefore, the relationships between HHI and Islamic bank deposits are explained by a representation of banks' management, operational, and market competition. Nonetheless, knowing how the Islamic bank's concentration in Malaysia determines the liquidity of Islamic deposits is substantial.

As can be seen in Table 4.4, consistent with hypothesis 6, the fixed effects regression results show the association between the financial to deposit ratio (FDR) and Islamic bank deposits is negative and significant at 1% (t -value = -5.31; Coeff. = -0.298). In confirming the validity of hypothesis 6, this implies that an increase of 1 % in the FDR leads to a decrease in the Islamic bank deposits by -0.298 %. These empirical results, hence, indicate that the greater level of FDR causes a negative influence on liquidity creation in the case of Islamic bank deposits. Accordingly, this result suggests that more customer financing leads to fewer Islamic bank deposits. The FDR aims to determine how much a bank uses deposits for financing activities. A higher FDR indicates that a bank relies more on deposits to finance its assets. If the ratio is too high, it suggests that the bank has deficiencies in liquidity to cover its short-term financing requirements. In contrast, a bank may not generate as much funds as it might if the ratio is too low. Prior works of literature regarding the relationship between FDR and Islamic deposits are scarce. However, a study by Oktaviani and Riyadi (2021) found a significant influence of FDR on the profit-sharing rate of mudharabah deposits. Prior 2000s, banks in Malaysia typically relied on customers' deposits from retail and wholesale sectors, and during the millennium year, up to 82% of all funding activities were from bank deposits (Linn & Ang, 2016).

For hypothesis 7, the regression results in Table 4.4 reports that the relationship between non-performing financing (NPF) and Islamic bank deposits is positive and insignificant (t -value = 0.59; Coeff. = 0.320). This implies that an increase of 1 % in the NPF leads to an increase of 0.320 % in Islamic bank deposits. These obtained results are contradicted with hypothesis 7 and previous research by Tomi et. al. (2020)

and Widarjono et. al. (2020), which postulates negative influence on banks' liquidity deposit money. Tomi et. al. (2020) revealed that higher NPL might detrimentally affect the operational efficiency and financial performance of deposit-taking institutions. Widarjono et. al. (2020) reported that higher NPF may have adverse effects on Islamic banks and leading to a decline in bank's liquidity. Accordingly, the obtained results can be interpreted by stating that the high ratio of NPF compared to a higher of Islamic bank deposits liquidity, implying that Islamic banks are ineffectively managing bad financing, but still able to attract depositors to put their money in Islamic banks. Considerably, Widarjono and Rudatin (2021) argued that the increase in NPF can be influenced by the distribution of higher concentrated financing in Islamic banks, such as the higher portion of non-PLS financing (e.g., murabahah, istisna, tawarruq and ijarah). This condition also signifies the banks' incapability to extend credit to other potentially profitable businesses.

In line with hypothesis 8, the bank size, which represents by the total assets in Islamic banks, has a positive relationship and is significant at a 1% level with Islamic bank deposits (t -value = 39.24; Coeff. = - 1.013), indicating an increase of 1 % in total assets causes an increase in Islamic bank deposits by 1.01 %. The reported positive and significant relationship between bank size and deposit liquidity creation is consistent with the empirical findings from previous studies (Alebachew Legass et al., 2021; Demircuc-Kunt & Huizinga, 1999; Ferrouhi, 2017; Kaufman, 2007;; Thao & Thanh, 2021; Winarto et al., 2022). Larger banks often create higher liquidity levels since they have more opportunities to diversify their deposits and investment products. Larger banks also have a tremendous possibility of offering financing products since

they have substantial liquidity. Bank management must manage assets effectively and efficiently to contribute to higher liquidity in Islamic bank deposits. Consequently, larger Islamic banks can relax more in expanding and extending their loans and financing activities, boosting the amount of their liquidity creation in Islamic deposits. Based on these, it can be confidently stated that the obtained positive and significant relationship between bank size and liquidity creation is consistent with the theoretical argument of the existing literature.

In conclusion, the significant bank-specific financial independent variables that influenced the dependent variable of Islamic bank deposits are net profit margin (NPM), Herfindahl-Hirschman Index (HHI), financing to deposit ratio (FDR) and bank size. Islamic bank deposits' determinants of net profit margin (NPM), financing to deposit ratio (FDR), and bank size are significant at a 1% level. At the same time, the Herfindahl-Hirschman Index (HHI) variable is significant at a 5% level. However, the variables of return on assets (ROA), return on equity (ROE), capital adequacy ratio (CAR), and non performing financing (NPF) are not significant at any level.

4.1.4.1 Sensitivity Test for Examining the Robustness of the Fixed Effects Model

This section presents the results of other econometric models to verify and confirm the robustness of the results obtained from panel data regressions with the fixed effects model in the previous subsection.

Table 4. 5*Sensitivity Test for Examining the Robustness of the Fixed Effects Model*

Total Islamic Deposit	OLS	RE	FE	FE CLUSTER
NPM	0.041*** (0.001)	0.040*** (0.001)	0.040*** (0.001)	0.040*** (0.001)
ROA	-2.622*** (0.970)	-0.892 (0.933)	-0.166 (0.927)	-0.166 (2.365)
ROE	-0.055 (0.059)	-0.045 (0.053)	-0.050 (0.052)	-0.050 (0.061)
CAR	-0.466*** (0.111)	-0.199* (0.110)	-0.080 (0.112)	-0.080 (0.169)
HHI	1.435*** (0.337)	1.114*** (0.330)	0.832** (0.339)	0.832*** (0.168)
FDR	-0.571*** (0.049)	-0.403*** (0.053)	-0.298*** (0.056)	-0.298** (0.107)
NPF	-1.062** (0.516)	-0.155 (0.534)	0.320 (0.545)	0.320 (0.476)
BANK SIZE	1.051*** (0.018)	1.038*** (0.022)	1.013*** (0.026)	1.013*** (0.066)
Constant	-0.590* (0.307)	-0.620* (0.367)	-0.319 (0.427)	-0.319 (1.016)
Observations	258	258	258	258
R-square	0.9729	0.9646	0.9652	0.9652
Number of banks	16	16	16	16
Breusch-Pagan LM test		0.0000***		
Hausman test			0.0000***	
Chow test			0.0000***	
Multicollinearity (VIF)	1.44			
Heteroskedasticity	0.0000***			
Serial Correlation	0.0000***			

*Notes: 1. Standard errors in parentheses.**2. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$*

To investigate the robustness of the examined fixed effects model (FE) in the previous subsection, measuring the determinants of Islamic bank deposits is presented in another three models, which are the pooled ordinary least square model (OLS), random effects model (RE) and fixed effects cluster model (FE CLUSTER). Such an approach aims to estimate and control for the interaction effects between bank-specific financial independent variables and the dependent variable of Islamic bank deposits.

The first test is the Breusch-Pagan LM test (Breusch Pagan, 1980), which differentiates pooled OLS and RE models. The result shows the p -value is less than 0.05, concluding that the RE model is more appropriate than the OLS model. In other words, there are bank-specific effects in the data. The second test that is commonly used in applied panel data analysis seeks to determine which is more appropriate, whether the RE model or the FE model, by using the Hausman specification test (Hausman, 1978). The result of the Hausman test shows the p -value is less than 0.05, which rejects the null hypothesis. This indicates that the RE model is not appropriate, and the FE model is to be preferred. This FE model implies that each bank has a different intercept that does not share the common intercept. The third test is the Chow test, which detects whether datasets contain specific effects by testing the pooled OLS and FE models. The Chow test aims to test whether the intercepts' restrictions are the same or different. Based on the result of the Chow test, the p -value is less than 0.05, indicating that rejecting the null hypothesis and concluding that each bank has a different intercept or FE model is more appropriate.

Table 4.5 shows the R -square results of all four models reflecting a high level of goodness fit statistics (OLS:0.9729; RE:0.9646; FE:0.9652; FE CLUSTER:0.9652). No multicollinearity problem since the mean VIF is below 10. The diagnostic checks indicate heteroskedasticity and serial correlation problems since the p -value for both tests is less than 0.05. The solution to these issues is using the cluster option (Hoechle 2014), which relaxes the assumption that the errors are unrelated (Siong, 2018). Therefore, the panel regression analysis using the FE CLUSTER model is run to resolve heteroskedasticity and serial correlation problems.

4.1.4.2 Measuring the Bank Specific-Financial Determinants through Additional Panel Data Regressions with Firm Effects Using Least Square Dummy Variable (LSDV)

In order to verify the robustness of the examined FE model in the previous subsection, the additional panel data regressions with firm effects using the Least Square Dummy Variable (LSDV) are analyzed and presented in Table 4.6.

Another approach for a fixed effects estimator is the Least Square Dummy Variable (LSDV). Using a different intercept for each unit, this estimator estimates the model using the original data (untransformed). LSDV identifies fixed effects between Pooled OLS and Random effects models without testing for unit-specific effects. After running the LSDV model and restricting the firm-specific dummy using F-statistic, the joint hypotheses testing is employed in this research to determine if all Islamic banks may share the same intercept (or impose a common intercept). The objective is to know whether the differences in the firm's effects are statistically significant. Normally, the specific dummy, such as firm-effect, will remain in the model because there is the unit data's intercept (Siong, 2018).

Table 4. 6

Additional Panel Data Regressions with Firm Effects

Total Islamic Deposit	Firm Effects
NPM	0.040*** (0.001)
ROA	-0.166 (0.927)
ROE	-0.050 (0.052)
CAR	-0.080 (0.112)

HHI	0.832** (0.339)
FDR	-0.298*** (0.056)
NPF	0.320 (0.545)
BANK SIZE	1.013*** (0.026)
FIRM1	0.112 (0.089)
FIRM2	0.439*** (0.091)
FIRM3	0.623*** (0.090)
FIRM4	0.649*** (0.088)
FIRM5	0.492*** (0.096)
FIRM6	0.554*** (0.109)
FIRM7	0.477*** (0.106)
FIRM8	0.541*** (0.093)
FIRM9	0.368*** (0.088)
FIRM10	0.013 (0.0903)
FIRM11	0.407*** (0.118)
FIRM12	0.520*** (0.095)
FIRM13	0.459*** (0.090)
FIRM14	0.488*** (0.099)
FIRM15	0.458*** (0.095)
Constant	-0.737* (0.401)
Observations	258
R-square	0.9814
Number of banks	16
Chow test	0.0000***

Notes: 1. Standard errors in parentheses.

2. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The panel data regression models in Table 4.6 with Firm Effects estimation are employed to examine the robustness of the results obtained by this research. The Fixed Effects model implies that each firm (i.e., Islamic bank) has a different intercept. For

the Firm Effects model, the firm-specific dummies (i.e., 16 dummies of Islamic banks) must be generated before running the LSDV. However, to avoid the dummy trap in the model, the regression of LSDV estimation only requires a maximum of 15 firm dummies in the joint hypotheses testing. The Chow test is additionally applied to determine if a specific effect is present in the datasets and whether the restrictions on the intercepts are the same or different. The *R*-square is 0.9814, reflecting the Firm Effects model with high goodness of fit statistics. The Firm Effects model also shows the null hypothesis of the common intercept for all firms is rejected (p -value < 0.05). Thus, all Islamic banks have different intercepts. The Firm Effects model results show that 13 banks are positively and significantly, and two are positively but insignificantly associated with Islamic bank deposits.

As a conclusion for the result of the relationship between bank-specific financial determinants and Islamic bank deposits, the positive and significant determinants are net profit margin (NPM), Herfindahl-Hirschman Index (HHI), and bank size. In contrast, the significant financing to deposit ratio (FDR) determinant has a negative association. In addition, the relationship between significant bank-specific financial determinants and Islamic bank deposits is associated significantly with 13 Islamic banks, each with different intercepts, which clarifies there is a firm-specific effect. Therefore, the research findings are supported by hypothesis 1, hypothesis 4, hypothesis 5, hypothesis 6, and hypothesis 8, but not supported by hypothesis 2, hypothesis 3, and hypothesis 7.

The findings are beneficial to Islamic banking players in Malaysia. For instance, the positive relationship between NPM and Islamic deposits suggest that

Islamic banking players should offer competitive rates to attract new depositors as well as retain the existing depositors. They are able to do so if only the Islamic banks achieved positive profit margin and profitability. Consequently, increased profitability has positive impact on the Islamic banks ability to provide competitive rates for financing. In doing so, Islamic banks can attract more customers to borrow from them through direct benefit. From the customers point of view, they benefit from this financing facilities to develop their business and projects. In a nutshell, NPM allows Islamic banks to offer better pricing for their banking products, which benefits customers and generate growth to the economy.

HHI results are useful to market practitioners because it indicates that competition among banks is healthy in promoting market vigor and good quality service to the stakeholders. In other words, for banks to have good reputation and well-liked by customers, they need to remain competitive both in terms of the pricing, service quality and governance. In consistent with other past studies, bank size plays significant role to Islamic deposits. It is because the larger the bank, the higher is the rates offered, the better the security measures which are sought by customers or depositors. This simply that banks need to be in bigger size.

Interestingly, the negative result of FDR shows that Islamic banks should seriously reconsider in their business plan on the proportion of financing to be disburse by taking into account their deposits size, in order to avoid any potential liquidity risk.

4.2 Estimating the Macroeconomics and Regulatory Determinants of Islamic Bank Deposits

This section analyses the second statistical model used in this study. The report is based on examining 16 Islamic banks in Malaysia, including 11 local and five foreign banks. An initial descriptive analysis of the studied data, skewness and kurtosis statistics, the Pearson correlation matrix test, and panel data regressions are performed. This subsection is subjected to answer the second objective in this research regarding the relationship between the independent variables of macroeconomic and regulatory determinants with the dependent variables of Islamic bank deposits. The second objective of this research is formed by the hypotheses developed from the literature reviews in Chapter Two and presented by the following statistical model.

$$IBD_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 INF_{it} + \beta_3 UNEMPLOY_{it} + \beta_4 OPR_{it} + \beta_5 S2IFSA_{it} + \varepsilon_{it} \dots \dots \dots (2)$$

Where, β_0 = constant

i = bank

t = time /period

ε_{it} = Error term of bank (i) in time (t)

IBD_{it} = Islamic Banks Deposit

$B_1 GDP_{it}$ = Gross Domestic Product

B_2INFit	=	Inflation
$B_3UNEMPLOYit$	=	Unemployment
B_4OPRit	=	Overnight Policy Rate
$B_5S2IFSAit$	=	Section 2, IFSA 2013

4.2.1 Descriptive Statistics

Table 4. 7

Descriptive Statistics

Variable	Total Islamic Deposit	GDP	INF	UNEMPLOY	OPR	S2IFSA
Mean	16.184	13.826	0.021	0.034	0.029	0.554
Std. dev.	1.580	0.348	0.015	0.005	0.006	0.498
Min	0.000	12.773	-0.011	0.029	0.018	0.000
Max	19.006	14.251	0.054	0.046	0.055	1.000

Table 4.7 compiles the data that describe the macroeconomic and regulatory independent factors. The mean value of the Total Islamic Deposit is 16.184 (RM10,681,245 million), and the standard deviation is 1.580, which suggests that Islamic bank deposits are closer to the mean. While the ranges values of Islamic bank deposits are 0 and 19.006 (RM0 to RM179,556,414 million), respectively, this means that the total Islamic bank deposits of examined banks are in a broader range with different amounts during the study's duration.

The gross domestic products (GDP) at current prices score a log value of 13.826 (RM1,010,545 million) on average, with the highest value of 12.773 (RM352,568 million) and the lowest value of 14.251 (RM1,545,719 million), implying

the economic conditions in Malaysia has gradually improved positively throughout the examined period. The standard deviation of 0.348 indicates that the GDP data are very close in relation to the mean. Representing the Malaysian government has control over the inflation (INF) issues, the statistics show magnitudes range between -0.011 and 0.054, with a mean value of 0.021 and a standard deviation of 0.015. Hence, there is no disproportionate economic slump. Regarding unemployment (UNEMPLOY), the lowest value scores at 0.029 and the highest at 0.046. The standard deviation is 0.005 shows a closer dispersion of data in relation to the mean of 0.034, signifying that Malaysia's unemployment is relatively low and stable at around 3%, which means the population is experiencing close to full employment, and shows an "ideal" economic condition since the average scores below 5% throughout the examined period of 22 years.

The overnight policy rates (OPR) show a lower deviation at 0.006 from its means value of 0.029, with the minimum and maximum values of 0.018 and 0.055, respectively, demonstrating that OPR always has a progressive movement by the central bank from 2000 to 2021. Finally, for the application of section 2 Islamic Financial Services Act 2013 (S2IFSA) by Islamic banks as required by the Bank Negara Malaysia, the results show ranges between 0.000 and 1.000, indicating the dummy value of "1" for the application of S2IFSA since 2013 to the current year, while dummy value if "0" is for non-application of S2IFSA before the commencement year of 2013.

4.2.2 Skewness and Kurtosis Statistics

Table 4. 8

Normality test

Variable	Total Islamic Deposit	GDP	INF	UNEMPLOY	OPR	S2IFSA
Skewness	0.000	0.000	0.476	0.000	0.000	0.146
Kurtosis	0.000	0.385	0.175	0.001	0.000	0.000

Table 4.8 shows the results of skewness and kurtosis. Skewness and kurtosis criteria are used to check the data's normalcy. The skewness ranges from 0.000 to 0.476, and the coefficient of kurtosis ranges from 0.000 to 0.385. The skewness values should ideally be close to zero for data with a normal distribution. Skewness and kurtosis values between -2 and +2 are regarded as acceptable for a normal univariate distribution (George & Mallery, 2010; Hair et. al., 2010).

4.2.3 Pearson Correlation Matrix Test

Table 4. 9

Pearson Correlation Matrix Test

Variable	Total Islamic Deposit	GDP	INF	UNEMPLOY	OPR	S2IFSA
Total Islamic Deposit	1					
GDP	0.362***	1				
INF	-0.172*	-0.219***	1			
UNEMPLOY	0.134**	0.291***	-0.384***	1		
OPR	-0.137**	-0.437***	0.327***	-0.646***	1	

Notes: * $p < 0.01$, ** $p < 0.05$, *** $p < 0.001$

The Pearson correlation matrix results in Table 4.9 show that all the macroeconomic and regulatory variables correlations with Islamic bank deposits are not highly correlated. There is no multicollinearity issue if the correlation values are less than or equal to 0.8 (Brooks, 2008; Haniffa & Cooke, 2005; J. Li et al., 2008)

4.2.4 Panel Data Regressions with Fixed Effects Model: Measuring the Macroeconomic and Regulatory Determinants of Islamic Bank Deposits

The panel data regressions of the fixed effects model in Table 4.10 demonstrate the rejection of the null hypothesis (p -value = 0.000, significant level at 1%), which states that there is no common intercept for all the tested Islamic banks. The Hausman test (p -value = 0.000) indicates that coefficient differences are systematic and that the fixed effect model is the most effective way to analyze the factors that influence Islamic bank deposits. Furthermore, the R-square is 0.3323, which reflects the model's poor goodness of fit statistics of the model.

Table 4. 10

Panel Data Regressions with Fixed Effects Model: Measuring the Macroeconomics Determinants of Islamic Deposits

Total Islamic Deposit	Coef.	Std.err.	t-value
GDP	2.015	0.395	5.10***
INF	-7.985	4.641	-1.72*
UNEMPLOY	-5.743	19.632	-0.31
OPR	0.391	15.897	0.02
S2IFSA	-0.065	0.253	-0.26
Constant	-11.286	5.776	-1.95*
Observations	258		
Number of banks	16		
R-Square	0.3323		
Prob>F	0.0000***		
Hausman test	0.0000***		

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Confirming the expectation from hypothesis 9, the regressions result in Table 4.10 shows a positive association between gross domestic products (GDP) and Islamic bank deposits with a significant level at 1% (t -value=0.07, Coeff. =2.015). This positive effect of GDP and variations level of bank deposits aligns with the past literature (Abdulazeez et. al., 2018); Asante et. al., 2023; Boadi et. al., 2015). In contrast, the study conducted by Ananwude (2021) revealed that the GDP growth rate does not significantly influence the level of deposits. Furthermore, Ali et. al. (2019) stated there is some negative correlation between GDP and Islamic bank deposits in developing countries. Recently, Ab Rahman et. al. (2021) highlighted that although GDP has no substantial impact on deposits in Islamic banks, the positive relationship confirms previous research results that a robust economy increases Islamic deposits. Moreover, bank liquidity such as local currency deposits has a significant positive relationship with real economic output or GDP (Berger & Sedunov, 2017; Abiodun et. al., 2021). Therefore, these results confirmed that Islamic banks can generate more liquidity through Islamic deposits with higher GDP, which further contributes significantly to economic growth in a country.

Concerning inflation (INF), a coefficient level of -7.985 (t -value = -1.72) is significant at the 10% level. Thus, increased inflation decreases the liquidity of Islamic bank deposits, as predicted in hypothesis 10. This negative relationship is consistent with Ali et. al. (2019), Abduh et. al. (2011), Khodaei Valahzaghari & Kashfi (2014), and Shi et. al. (2021) According to Ali et. al. (2019), the real value of total deposits dropped dramatically in the early 1990s due to depositors' loss of confidence in the banking system impacted by the high inflation rates. Abduh et. al. (2011) examined

the effects of inflation on Islamic bank deposits and found that as inflation rises, consumers demand more cash for daily expenses and consumptions, which has a negative impact on their overall savings and deposits, even though banks boost their rate of returns. However, in some previous studies, the general idea of inflation does not conflict with the relationship with banks deposits. The significant findings from Abiodun et. al. (2021), Lee et. al. (2020) and Mohamed Youssef et. al. (2022) indicates that inflation positively influences the liquidity of bank deposits. These inconsistent results may be due to time specifics, as Islamic banks' deposits rate of return during economic crises may not be as attractive as conventional deposits in the countries examined in past studies. Thus, the main findings suggest that inflation negatively impacts total Islamic bank deposits.

With regard to hypothesis 11, the regression's result shows an insignificant and negative association (t -value = -0.31, Coeff. = -5.743) between unemployment and Islamic bank deposits, representing a 1 % increase in unemployment which decreases Islamic bank deposits by 5.743 %. This result is consistent with Cahyono et. al. (2021), Shah et. al. (2018) and Casu et. al. (2019), which concluded that unemployment negatively relates to bank deposits, resulting in the financial sector's instabilities. Thus, an elevated level of unemployment had a favorable effect on the development of commercial bank deposits which may be attributed to the motivation for people to deposit their earnings in banking institutions (Alebachew Legass et al., 2021). However, according to Ferrouhhi (2017), macroeconomic variables such as unemployment have a positive but insignificant effect on the volume of deposits. The result of these findings implies that the negative influences occur between

unemployment and bank deposits. However, the result may differ based on the liquidity measurement and other variables. Therefore, the unemployment rate is another economic indicator of Islamic bank performance. High unemployment rates may also be associated with increased banking sector instability.

The findings show a favorable positive association between overnight policy rates (OPR) with Islamic bank deposits, proving hypothesis 12. However, the results seem insignificant, as indicated by the coefficient of 0.391 and *t*-value of 0.02, signifying that the OPR does not favorably impact Islamic bank deposits. Previous studies regarding the relationship between OPR and Islamic bank deposits are scarce, and most previous studies focus more on interest rates. Overnight credit interest rates have been explored in the literature throughout the last decade (Laine et al. 2012). The overnight money market rates indicate the expected interest rate level and monetary policy stance (Nautz & Scheithauer, 2011). The study by Raj and John (2020), examined how three central banks, namely the United States Federal Reserve, the European Central Bank, and the Reserve Bank of India, guided interest rates in the face of substantial excess liquidity. Previous researchers found a positive correlation between bank deposits and interest rates (e.g., Bikker & Gerritsen, 2018; Ferrouhi 2017; Mashamba et al., 2014; Ostadi & Sarlak, 2014). One notable contribution to this study is the inclusion of OPR as one of the determinants of Islamic deposits. These research findings dictate that the deposits of Islamic banks in Malaysia show a positive relationship with OPR and statistically insignificant. Therefore, the changes in OPR seem immaterial in the liquidity creation of Islamic bank deposits in Malaysia, even though there is a positive association between the two variables.

The final hypothesis 13 regards the relationship between the application of Section 2, Islamic Financial Services Act 2013 (S2IFSA), and Islamic bank deposits. The findings contradict hypothesis 13, with a negative coefficient. The fixed effect regressions results show the relationship between S2IFSA and Islamic bank deposits is negative and statistically insignificant (t -value = -0.26, Coef. = -0.065). This implies that an increase of 1 % in the S2IFSA leads to a decrease of Islamic bank deposits by -0.065 %, suggesting that Islamic bank deposits create less liquidity as a result of the implementation S2IFSA's requirements by banks' management. Studies on the relationship between regulatory requirements and Islamic bank deposits are scarce. Nevertheless, compliance with regulatory and supervisory requirements improves the monitoring process of banks and hence, prevents bank runs by increasing the public trust in the banking sector and reducing the risk-taking behavior of banks, which may consequently promote banking financial stability. Hence, the stability of Islamic banks among the public encourages the generation of Islamic bank deposits liquidity.

Section 2 of IFSA 2013 requires Islamic banks to segregate the deposit and investment account. This segregation enables Islamic bank to have better control and management for the deposits structure. At the same time, this regulation also protect depositors' rights in terms of their funds. Therefore, the result from this study highlights that if Islamic banks are less stringent in their application of IFSA, they tend to have higher risk in their management and protection to their depositors. It is noteworthy to state that this result reflects the Islamic banks position for the study period covering 2013 – 2021. Different time period might shows more significant results for IFSA on the Islamic deposits.

4.2.4.1 Sensitivity Test for Examining the Robustness of the Fixed Effects Model

This section presents the results of some other econometric models and tests to verify and confirm the robustness of the obtained results of panel data regressions with the fixed effects model in the previous subsection of 4.2.4.

Table 4. 11

Sensitivity Test for Examining the Robustness of the Fixed Effects Model

Total Islamic Deposit	OLS	RE	FE	FE CLUSTER
GDP	1.623*** (0.578)	1.987*** (0.403)	2.015*** (0.395)	2.015*** (0.586)
INF	-11.127 (6.936)	-8.219* (4.743)	-7.985* (4.640)	-7.985* (4.862)
UNEMPLOY	14.025 (27.550)	-4.305 (19.033)	-5.743 (18.632)	-5.743 (11.205)
OPR	20.327 (23.441)	1.857 (16.235)	0.391 (15.900)	0.391 (8.494)
S2IFSA	0.021 (0.376)	-0.0592 (0.258)	-0.0646 (0.253)	-0.0646 (0.187)
Constant	-7.109 (8.521)	-11.038* (5.904)	-11.286* (5.776)	-11.286 (7.728)
Observations	258	258	258	258
R-square	0.1439	0.3323	0.3323	0.3323
Number of banks	16	16	16	16
Breusch-Pagan LM test		0.0000***		
Hausman test			0.0075***	
Chow test			0.0000***	
Multicollinearity (vif)	2.93			
Heteroskedasticity	0.0000***			
Serial Correlation	0.0000***			

Notes: 1. Standard errors in parentheses.

2. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

In order to examine the robustness of the fixed effects model (FE) studied in the preceding subsection of 4.2.4, the determinants of Islamic bank deposits are measured using three additional models: the pooled ordinary least square model

(OLS), the random effects model (RE), and the fixed effects cluster model (FE CLUSTER). This approach aims to estimate and control for the interaction effects between macroeconomic and regulatory independent variables and the dependent variable of Islamic bank deposits.

For the distinction between the pooled OLS and the RE models, the Breusch-Pagan LM test (Breusch Pagan, 1980) is utilized. The p -value is less than 0.05, indicating that the RE model is more appropriate than the OLS model. In other words, the data contains firm-specific effects. The Hausman specification test (Hausman, 1978) is a second test to identify whether the RE or FE model is more relevant. The Hausman test shows that the p -value is less than 0.05, indicating that the null hypothesis is rejected, confirming the FE model should be used instead. According to the FE model, each bank has a unique intercept that is separate from the common intercept. The Chow test on the pooled OLS and FE models is performed and determines if datasets contain a specific effect. The Chow test seeks to evaluate if the intercepts' constraints are identical or distinctive. The p -value is less than 0.05 based on the Chow test results, suggesting that the null hypothesis should be rejected and that each bank has a unique intercept or that the FE model is more relevant.

Table 4.11 demonstrates that the R-square values for all four models indicate a low level of goodness-of-fit statistics (OLS:0.1439; RE:0.3323; FE:0.3323; FE CLUSTER:0.3323). There is no multicollinearity problem because the mean VIF is less than 10. Due to the fact that the p -values for heteroskedasticity and serial correlation tests are both less than 0.05, diagnostic analyses indicate the presence of

heteroskedasticity and serial correlation issues. The solution to these issues is to use the cluster option (Hoechle, 2014), which relaxes the assumption that the errors are unrelated (Siong, 2018). To address the problems of heteroskedasticity and serial correlations, a panel regression analysis employing the FE CLUSTER model is performed. Notably, the coefficient correlation results and significance level of the FE and FE CLUSTER models are comparable. Nonetheless, the standard errors in brackets for the two models are marginally different.

As a result of the relationship between macroeconomic and regulatory determinants with Islamic bank deposits, the significant positive variables are gross domestic products, whereas the significant negative variable is inflation. However, unemployment, overnight policy rates, and application of section 2 IFSA, are not significant at any level.

4.2.4.2 Measuring the Macroeconomic and Regulatory Determinants through Additional Panel Data Regressions with Firm Effects Using Robust Standard Error

The additional panel data regressions with firm effects using the Least Square Dummy Variable (LSDV) are reviewed and presented in Table 4.12 to validate the robustness of the FE model investigated in the preceding subsection. The Least Square Dummy Variable (LSDV) is another approach for estimating fixed effects. This estimator calculates the model using the original (untransformed) data by employing a unique intercept for each unit. Without evaluating for unit-specific effects, LSDV distinguishes fixed effects between pooled OLS and random effects models. After

executing the LSDV model and restricting the firm-specific dummy by using the F-statistic, the joint hypotheses test is employed in this analysis to determine if all Islamic banks may share the same intercept (or impose a common intercept). The purpose is to determine whether statistically significant differences exist in the firm's effects.

Table 4. 12

Additional Panel Data Regressions with Firm Effects

Total Islamic Deposit	Firm Effects
GDP	2.015*** (0.395)
INF	-7.985* (4.640)
UNEMPLOY	-5.743 (18.632)
OPR	0.391 (15.897)
S2IFSA	-0.0646 (0.253)
FIRM1	-0.876** (0.361)
FIRM2	1.291*** (0.361)
FIRM3	0.947** (0.372)
FIRM4	0.371 (0.361)
FIRM5	2.125*** (0.366)
FIRM6	2.796*** (0.346)
FIRM7	2.680*** (0.366)
FIRM8	1.926*** (0.356)
FIRM9	1.035*** (0.372)
FIRM10	0.281 (0.356)
FIRM11	3.393*** (0.366)
FIRM12	2.161*** (0.346)
FIRM13	0.946** (0.372)
FIRM14	2.322***

FIRM15	(0.372) 2.154***
Constant	(0.356) -12.807** (5.790)
Observations	258
R-square	0.6420
Number of banks	16
Chow test	0.0000***

Notes: 1. Standard errors in parentheses.
2. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The panel data regression models in Table 4.12 with Firm Effects estimation are employed to examine the robustness of the results obtained by this research. The Fixed Effects model implies that each firm (i.e., Islamic bank) has a different intercept. Before conducting the LSDV for the Firm Effects model, the firm-specific variables (16 dummies for Islamic banks) must be generated. In order to avoid the dummy trap in the model, the regression of LSDV estimation requires a maximum of 15 firm dummies for the joint hypotheses testing. In addition, the Chow test is used to determine whether a specific effect is present in the datasets and whether the restrictions on the intercepts are identical or distinct. The R -square is 0.6420, reflecting the Firm Effects model with moderate goodness of fit statistics. The Firm Effects model also shows the null hypothesis of the common intercept for all firms is rejected (p -value < 0.05). Thus, all Islamic banks have different intercepts. The Firm Effects model results show that 14 banks are positively and significantly, and one bank is positively but insignificantly associated with Islamic bank deposits.

As a conclusion for the relationship between macroeconomic and regulatory determinants and Islamic bank deposits, the positive and significant variable is gross

domestic products, whereas the significant inflation variable has a negative relationship. In addition, the relationship between significance macroeconomic and regulatory determinants is significantly associated with 14 Islamic banks, each with different intercepts, which clarifies that there is a firm-specific effect. Therefore, hypothesis 9, hypothesis 10, and hypothesis 12 supported the research findings, but not supported by hypothesis 11, and hypothesis 13.

4.3 Estimating the Business Enterprises Depositors as Moderating Variable Between Independent Variable and Dependent Variable of Islamic Bank Deposits

This subsection presents the analysis of the third statistical model in this research. The study includes the moderating role of business enterprises depositors, stepwise in multicollinearity test, Pearson correlation matrix test, and panel data regressions. This subsection is subjected to answer the third objective in this research regarding the relationship between the significant independent variables and the moderating variable, with the dependent variables of Islamic bank deposits.

This research incorporates business enterprise depositors as a moderating variable to better understand the determinants of Islamic bank deposits. The moderation approach is to comprehend how independent variables function when the moderator imposes conditions on their relationship with the dependent variable. The statistical model of a moderated effect is an interaction between the independent variables and the moderator variable. In this research, moderation refers to a situation in which the effect of independent variables on the dependent variable of Islamic bank

deposits varies as a function of business enterprises deposits as a moderating variable. The following subsection discusses the significance of business enterprises depositors as moderating variable in this research.

4.3.1 Moderating Role of Business Enterprises Depositors

This subsection discusses the significance of business enterprises depositors as moderating variable based on the statistical analysis by comparing with the individual depositors. The following statistical analysis includes a comparison of the total collections from both types of depositors, and the Pearson correlation matrix results.

Figure 4. 1

Total Deposits from Business Enterprises and Individual Depositors, 2008-2021

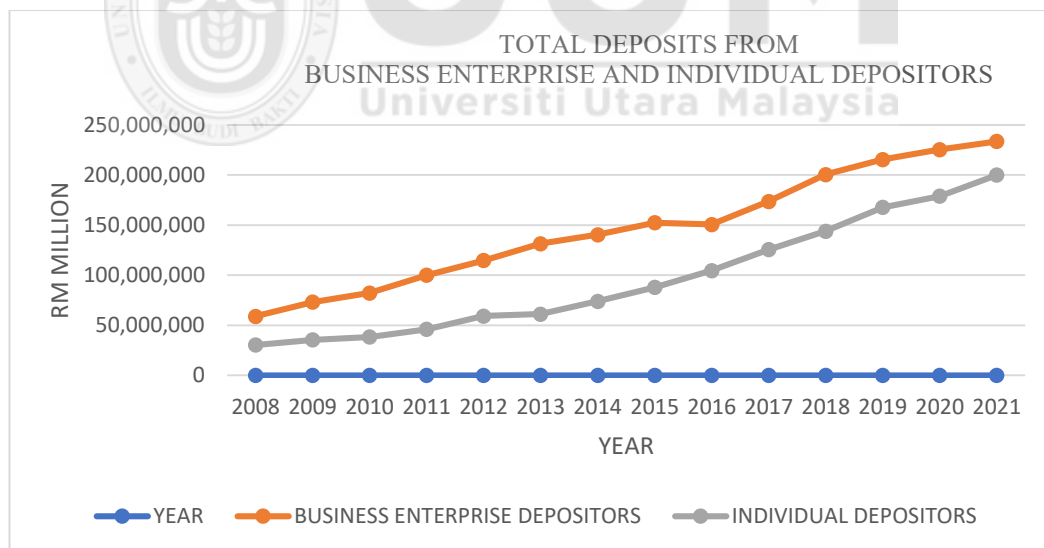


Figure 4. 2

Comparison of Total Deposits Between Business Enterprises and Individual Depositors, 2008-2021

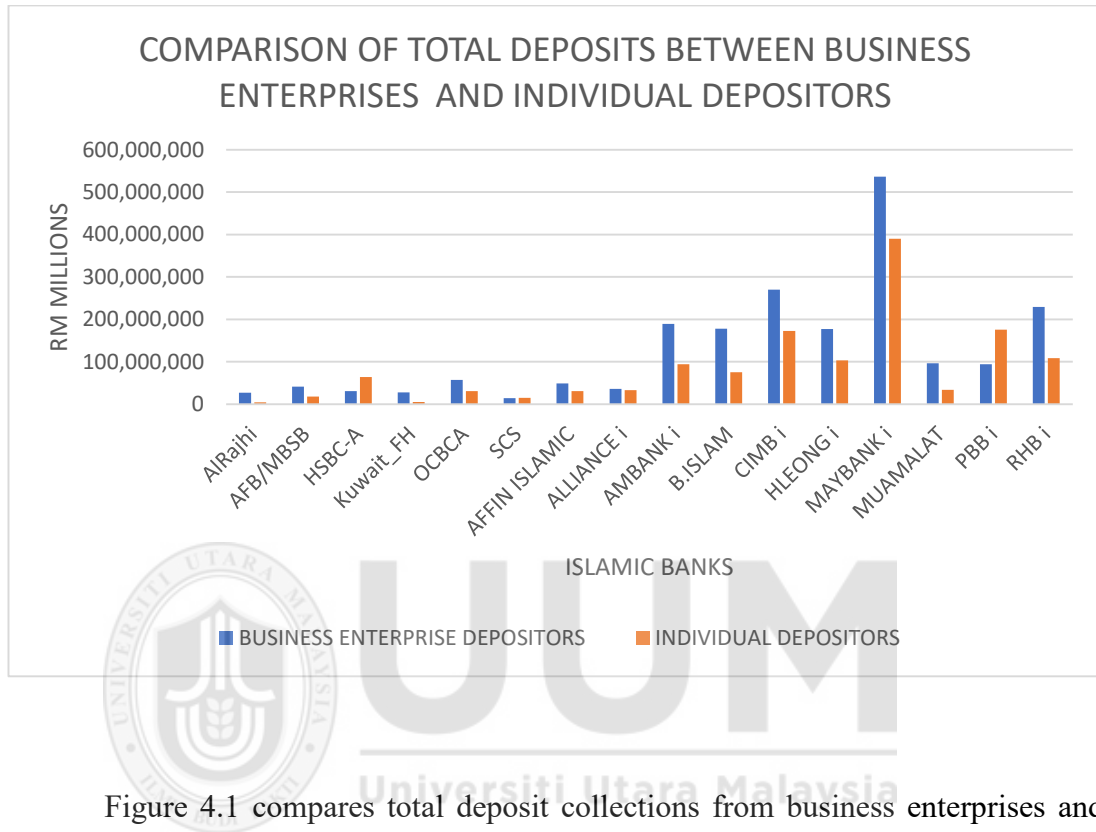


Figure 4.1 compares total deposit collections from business enterprises and individual depositors. The collections from business enterprises were constantly higher from 2008 to 2021 compared to individual deposits. Figure 4.2 compares total Islamic deposits generated by 16 Islamic banks in Malaysia from 2008 to 2021, which shows that 15 Islamic banks generated a higher volume of deposits from business enterprises depositors, and only one Islamic bank, HSBC Amanah Berhad generates a higher volume of deposits from individual depositors. Thus, as discussed in the presented statistical figures on the performance of business enterprises depositors and the reasoning from the theoretical perspectives in Chapter Two, business enterprises depositors are the significant moderating variable for this research.

Table 4. 13*Regression Test*

Total Islamic Deposit	Coef.	Std..Err.	T-Value
Business Enterprises Depositors	0.814	0.023	35.27***
Individual Depositors	0.176	0.016	11.21***
Constant	1.236	0.228	5.41
Observations	258		
R-Square	0.9515		
Number of banks	16		
Multicollinearity (vif)	2.52		
Prob>F	0.0000****		

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4.13 shows the regression results for both types of depositors, business enterprises and individual depositors, presenting a positive significant association with Islamic bank deposits. The coefficient value of the association between business enterprises depositors and Islamic bank deposits is 0.814, which signals a high correlation value. The coefficient value of the association between individual depositors and Islamic bank deposits is 0.176, which signals a very low correlation value. Concerning the association with Islamic bank deposits, business enterprises depositors are perceived as highly correlated, while individual depositors are perceived as lowly correlated. Therefore, this research only chooses business enterprises depositors as the moderator as it shows the high correlation with Islamic bank deposits.

In conclusion, the abovementioned statistical analysis, together with the reasoning in the literature reviews in Chapter Two, specific characteristics and particular types of bank customers may serve as moderating variables in determining which Islamic bank to put their money in. Hence, it is essential to regard business depositors as a moderating variable in this research.

4.3.2 Stepwise In Multicollinearity Diagnostic Test

Table 4. 14

Stepwise in Variance Inflation Factor (VIF) Test

First Estimation Test		Second Estimation Test		Third Estimation Test		Fourth Estimation Test		Fifth Estimation Test		Sixth Estimation Test		
Variable	VIF	Variable	VIF	Variable	VIF	Variable	VIF	Variable	VIF	Variable	VIF	
GDP_BED	14226.8	BANK SIZE BED	1279.9	HHI BED	693	INF	198.2	FDR BED	152.5	BE DEPOSITORS	1.83	
BE DEPOSITORS	7935.8	HHI BED	1027.9	HHI	693	INF BED	195.4	FDR	144.9	NPM	1.79	
BANK SIZE BED	2394.97	HHI	1024.1	INF	199	FDR BED	159.3	BE DEPOSITORS	12.06	NPM BED	1.06	
HHI_BED	1488.36	BE_DEPOSITORS	453.84	INF BED	196	FDR	151.2	NPM	5.9	Mean VIF	1.56	
HHI	1481.47	BANK SIZE	264.12	FDR BED	168	BE DEPOSITORS	18.53	NPM BED	1.08			
GDP	754.8	FDR BED	253.79	FDR	158	NPM	6.21	Mean VIF	63.3			
BANK SIZE	465.56	FDR	242.42	BE DEPOSITORS	18.6	NPM BED	1.08	Mean VIF				
FDR_BED	278.77	INF	216.36	NPM	6.23	Mean VIF	104					
FDR	267.85	INF BED	213.29	NPM BED	1.08	Mean VIF						
INF	217.28	NPM	9.8	Mean VIF	237							
INF BED	214.28	NPM BED	1.26	Mean VIF								
NPM	10.9	Mean VIF	453.4									
NPM BED	1.28	Mean VIF										
Mean VIF	2287.6											

Table 4.14 displays stepwise estimation tests performed in this research to choose the significant independent variables that interact with collinearity in the tested model. This research runs the OLS model followed by the variance inflation factor (VIF) test to perform the multicollinearity test. There is a multicollinearity problem if the mean of VIF is greater than 10. However, when VIF is less than 10, it means no multicollinearity exists (consistent with the advantage of using panel data – less collinearity). Some textbooks prefer the VIF should be less than 5 (Siong 2018). The highest VIF variable can be dropped to reduce the multicollinearity problem (Siong 2018). There is no consensus among methodological and applied researchers on how much weight to give a VIF value or the most appropriate cutoff score (Thompson et al., 2017). The typical recommendations for a cutoff point are 5 or 10, and there is no formal cutoff figure or mechanism that determines whether a VIF is too high (Craney et al., 2002; Kim, 2019). To reduce the multicollinearity problem, the highest VIF variable can be dropped from the estimation (Craney et al., 2002; Kim, 2019; Lavery et al., 2019; Midi et al., 2010; Siong, 2018; Thompson et al., 2017). Nevertheless, the literature reviews in Chapter Two also supports the reasoning of the net profit margin (NPM) as variable which should remain in the estimation.

In the first estimation test of VIF, all significant bank-specific financial variables from the findings in subsection 4.1.4; net profit margin (NPM), Herfindahl-Hirschman Index (HHI), financing to deposit ratio (FDR), bank size, and significance macroeconomic variables from the findings in subsection 4.2.4; gross domestic products (GDP) and inflation (INF), are tested with the moderating variable of business enterprise depositors (BED). The result from the first estimation shows that

the mean VIF is 2287.6, far greater than 10. This too high of VIF is an unacceptable estimation and shows multicollinearity problems in the estimation model. Therefore, the highest VIF results of GDP are dropped out in the second estimation test to reduce the multicollinearity problem. The second estimation test still shows the undesirable consequence of VIF, and accordingly, the bank size variable has dropped. The third, fourth, and fifth estimations test follows the same procedures by dropping the variable with the highest VIF results (HHI, INF and FDR) to arrive at the desired less than 10 VIF result. Finally, in the sixth estimation test, the analysis shows a mean VIF of 1.56, which means no more multicollinearity problems exist in the estimation model. The final estimation model shows that only one significant variable; net profit margin (NPM) and the moderator business enterprises depositors are associates with Islamic bank deposits. Accordingly, none of the macroeconomic and regulatory independent variables are accepted as one of the significant determinants in the relationship of business enterprises deposits as moderating variable with Islamic bank deposits.

After running the VIF estimation testing, the final statistical model for this research is between net profit margin (NPM) as the independent variable, business enterprise depositors (BE DEPOSITORS) as the moderating variable, and Islamic bank deposits as the dependent variable. Therefore, from the preceding discussions and the literature reviews in Chapter Two, the third objective of this research is formed by the developed hypothesis developed and presented in the following statistical model.

$$IBD_{it} = \beta_0 + \beta_1 NPM_{it} + \beta_2 BEDEPOSITOR_{it} + \beta_3 NPM_{it} * BEDEPOSITOR_{it} + \varepsilon_{it} \dots (3)$$

Where, β_0 = constant

i = bank

t = time / period

ε_{it} = Error term of bank (i) in time (t)

IBD_{it} = Islamic Banks Deposit

$B_1 NPM_{it}$ = Net Profit Margin

$B_2 BEDEPOSITOR_{it}$ = Business Enterprises Depositors

$B_3 NPM_{it} * BEDEPOSITOR_{it}$ = Net Profit Margin * Business Enterprises Depositors

4.3.3 Descriptive Statistics

Table 4.15 shows descriptive statistics of significant independent variables tested previously in the preceding subsections. From the findings of subsections 4.3.1 and 4.3.2, the final statistical model tests the strength of the relationship between net profit margin (NPM) as the independent variable, business enterprises depositors (BED) as the moderating variable, and Islamic bank deposits as the dependent variable.

Table 4. 15*Descriptive Statistics*

VARIABLE	TOTAL ISLAMIC DEPOSIT	NPM	BE DEPOSITORS	NPM BED
Mean	16.184	-1.382	15.266	-1.889
Std. dev.	1.580	19.383	1.499	56.439
Min	0.000	-302.80	0.000	-721.22
Max	19.006	2.729	17.890	40.052

Table 4.15 summarizes the descriptive information for the final statistical model. The table illustrates that Malaysian Islamic bank deposits vary from 0.000 to 19.006 (RM0 to RM179,556,414 million). The minimal number of 0.000 indicates that some Islamic banks have zero deposits in their first year. Islamic bank deposits average is at 16.184 (RM10,681,245 million) with a standard deviation of 1.580, indicating deposits in Islamic banks are significantly spread out around the mean. The net profit margin (NPM) runs from -302.80 to 2.729, averaging -1.382. The MBSM Bank Berhad (previously known as Asian Finance Bank) reported a net loss margin of -302.80 % in its first year of operation in 2006, whereas the Kuwait Finance House had 2.729 % in 2011. The high standard deviation of 19.383 relative to the mean suggests NPM dispersions are mostly dispersed across 16 Islamic banks over 22 years. Market positioning, number of branches, type of banks, bank size, products and services influenced Islamic banks' profit making. Concerning business enterprises depositors (BE DEPOSITORS), the ranges of the data are between 0.000 to 17.890 (RM0 to RM58,820,441 million), with the standard deviation of 1.499, implying that the data are moderately close to the relation of mean at 15.266 (RM4,265,201 million).

Furthermore, the minimum and maximum values of NPMBED are -721.22 and 40.052, respectively. Whereas, the standard deviation is at 56.439, reflecting the data are spread out largely in relation to the mean at -1.889. The NPM BED represents the moderated effect, an interaction between the independent variables of net profit margin (NPM) and the moderator variable of business enterprises depositors (BED).

4.3.4 Pearson Correlation Matrix Test

Table 4. 16

Pearson Correlation Matrix Test

Variable	Total Islamic Deposit	NPM	BE DEPOSITORS	NPM BE
TOTAL DEPOSIT	1			
NPM	0.673***	1		
BE DEPOSITORS	0.963***	0.664***	1	
NPM BED	0.199**	0.230***	-0.173***	1

Notes: * $p < 0.01$, ** $p < 0.05$, *** $p < 0.001$

As shown in Table 4.16, the Pearson correlation matrix results are satisfactorily acceptable. The correlation values for NPM and NPM BED are lower than 0.8, which is perceived as not highly correlated. On the other hand, the BE DEPOSITORS has a correlation of 0.96, which is higher than the threshold value of 0.80 and is regarded as strongly correlated. The strong correlation value is tolerated despite being described as having a multicollinearity issue since BE DEPOSITORS is observed as the moderating variable in this research, and therefore cannot be omitted out from the estimation. The undesirable presence of multicollinearity in this regression model may be attributed to and magnified by the smaller sample sizes or observations, as

suggested by Kim (2019), Lavery et. al. (2019), Midi et. al. (2010) and Thompson et. al. (2017).

4.3.5 Panel Data Regressions with Random Effects Model: Measuring the Business Enterprises Depositors as Moderating Variable Between Independent Variable with Islamic Bank Deposits

Table 4. 17

Panel Data Regressions with Random Effect Model: Measuring the Business Enterprises Depositors as Moderating Variable Between Net Profit Margin and Islamic Bank Deposits

Total Islamic Deposit	Coef.	Std.err.	z-value
NPM	0.001	0.002	0.58
BE DEPOSITORS	1.007	0.027	37.72***
NPM_BED	0.001	0.000	2.81***
Constant	0.819	0.416	1.97**
Observations	258		
R-Square	0.9435		
Number of banks	16		
Prob>F	0.0000***		
Breusch-Pagan LM test	0.0000****		

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4.17 shows the result of the panel data regressions with random effects model in testing the final developed hypotheses of the relationship between net profit margin and Islamic bank deposits, with the presence of business enterprises deposits as moderator. Based on the Breusch-Pagan LM test (p -value of 0.000, significant level at 1%), the null hypothesis is rejected, signifying the difference in coefficient is systematic and, hence suggesting that the random effect model is the preferred method in evaluating the final statistical model. The results show that the overall model is

significant at $p < 0.01$ (F-test = 0.000) with R -square equal 0.9435 indicating the model's high level of goodness fit.

Table 4.17 shows the positive relationship between net profit margin (NPM) and Islamic bank deposits is statistically insignificant (t -value = 0.58; Coeff. = 0.001). However, the positive relationship between business enterprises deposits (BE DEPOSITORS) and Islamic bank deposits is significant at a 1% level. Moreover, the moderated effect of BE DEPOSITORS in the relationship between NPM and Islamic deposits is also positive and significant at a 1% level. This result is consistent with hypothesis 14, implying that Islamic banks can strengthen the generation of higher Islamic bank deposits with higher NPM in the presence of higher BE DEPOSITORS.

4.3.5.1 Sensitivity Test for Examining the Robustness of the Random Effects Model

This section presents the results of other econometric models to verify and confirm the robustness of the obtained results of panel data regressions with the random effects model in the preceding subsection 4.3.5.

Table 4. 18*Sensitivity Test for Examining the Robustness of the Random Effects Model*

Variables	OLS	RE	FE
NPM	0.004** (0.002)	0.001 (0.002)	0.001 (0.002)
BEDEPOSITORS	0.972*** (0.023)	1.007*** (0.027)	1.014*** (0.028)
NPMBE	0.001 (0.000)	0.000*** (0.000)	0.000*** (0.000)
Constant	1.350*** (0.359)	0.819** (0.416)	0.708 (0.431)
Observations	258	258	258
R-square	0.9303	0.9435	0.9435
Number of banks		16	16
Breusch-Pagan LM test		0.0000***	
Hausman test		0.1759	
Multicollinearity (vif)	1.56		

*Notes: 1. Standard errors in parentheses.**2. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$*

Table 4.18 shows that all three models' R-square results are reflected with a high level of goodness fit statistics. No multicollinearity problem since the mean VIF is below 10. The measurement continues with three models to evaluate the robustness of the examined random effects model (RE): the pooled ordinary least square model (OLS), the random effects model (RE), and the fixed effects model (FE). Such an approach aims to estimate and take into consideration the interaction effects of net profit margin on Islamic bank deposits. The first test is the Breusch-Pagan LM test (Breusch Pagan, 1980), which differentiates pooled OLS and RE models. The result shows the p -value is less than 0.05, confirming that the RE model is more appropriate than the OLS model. The second test seeks to determine which is more appropriate, whether RE model or FE model, by using the Hausman specification test (Hausman, 1978). The Hausman test results show that the p -value is more than 0.05, which accepts

the null hypothesis. These results verify and confirm the RE model is appropriate and preferable.

4.3.5.2 Measuring the Business Enterprises Depositors as Moderating Variable Between Independent Variable with Islamic Bank Deposits through Additional Panel Data Regressions with Firm Effects Using Robust Standard Error

To verify the final statistical model's robustness in the previous subsection 4.3.5.1, the additional panel data regressions with firm effects using the Least Square Dummy Variable (LSDV) are examined and presented in Table 4.19.

The Least Square Dummy Variable (LSDV) identifies fixed effects between pooled OLS and random effects models without testing for unit-specific effects. After running the LSDV model and restricting the firm-specific dummy using F-statistic, the joint hypotheses testing is employed in this research to determine if all Islamic banks may share the same intercept (or impose a common intercept). The objective is to know whether the differences in the firm's effects are statistically significant.

Table 4. 19

Additional Panel Data Regressions with Firm Effects

Variables	Firm Effects
NPM	0.001 (0.002)
BEDEPOSITORS	1.014*** (0.028)
NPMBE	0.001*** (0.000)
FIRM1	-0.853***

FIRM2	(0.108) 0.005
FIRM3	(0.109) -0.113
FIRM4	(0.112) -0.531***
FIRM5	(0.128) -0.195*
FIRM6	(0.110) -0.085
FIRM7	(0.116) -0.355***
FIRM8	(0.134) -0.750***
FIRM9	(0.123) 0.146
FIRM10	(0.110) -0.590***
FIRM11	(0.104) -0.281*
FIRM12	(0.146) -0.236**
FIRM13	(0.109) -0.516***
FIRM14	(0.115) 0.327***
FIRM15	(0.121) -0.648***
Constant	(0.125) 1.007**
Observations	(0.391) 258
R-square	0.9697
Number of banks	
Prob>F	0.0000***
Chow Test	0.0000***

Notes: 1. Standard errors in parentheses.
2. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The panel data regression models in Table 4.19 with Firm Effects estimation are employed to examine the robustness of the results obtained by this research. The robust option relaxes the assumption that the errors are identically distributed, while the cluster option relaxes the assumption that the errors are not connected (Siong, 2018).

Before performing the LSDV, 16 dummies of Islamic banks for the firm-specific effects model are constructed. However, to avoid the dummy trap in the model, the regression of LSDV estimation only requires a maximum of 15 firm dummies in the joint hypotheses testing. The Chow test is additionally applied to determine if a specific effect is present in the datasets and whether the restrictions on the intercepts are the same or different. The *R*-square is 0.9697, reflecting the Firm Effects model with high goodness of fit statistics. The Firm Effects model also shows the null hypothesis of the common intercept for all firms is rejected (p -value < 0.05). Thus, all Islamic banks have different intercepts. The Firm Effects model results show that one bank is positively and significantly, ten are negatively and significantly, and four are insignificantly associated with Islamic bank deposits.

In conclusion, the moderated effect of BE DEPOSITORS is positively strengthening in the relationship between NPM and Islamic deposits, and significant at 1% level. This result is consistent with hypothesis 14, implying that Islamic banks can strengthen the liquidity creation of Islamic bank deposits with higher NPM in the presence of higher BE DEPOSITORS. Islamic bank deposits are associated significantly with 11 banks, each with different intercepts, which clarifies that there is a firm-specific effect. Therefore, the empirical results support the final hypothesis 14 in this research.

4.4 Conclusion

Based on the empirical results of analyzing the dataset of 16 Islamic banks throughout 2000 – 2021, the descriptive statistical results in this empirical chapter confirm that

Islamic bank deposits are impacted significantly by its internal determinants (net profit margin, Herfindahl-Hirschman Index (HHI), financing to deposit ratio and bank size) and external determinants (gross domestic products and inflation). Additionally, the firm effect regressions model with robust standard error indicated a statistically significant association between the variables and Islamic bank deposits, indicating the positive role played by Islamic banks themselves. Moreover, the panel data regressions with the random effects model show that the moderating variable of business enterprises depositors only strengthens one independent variable: net profit margin in the significant statistical relationship with Islamic bank deposits.

In summary, the result of the relationship between bank-specific financial determinants and Islamic bank deposits, the positive and significant determinants are net profit margin (NPM), Herfindahl-Hirschman Index (HHI), and bank size. In contrast, the significant financing to deposit ratio (FDR) determinant has a negative association. However, the variables of return on assets (ROA), return on equity (ROE), capital adequacy ratio (CAR), and non performing financing (NPF) are not significant at any level. In addition, the relationship between significant bank-specific financial determinants and Islamic bank deposits is associated significantly with 13 Islamic banks, each with different intercepts, which clarifies there is a firm-specific effect. Therefore, the research findings on the first objective are supported by hypothesis 1, hypothesis 4, hypothesis 5, hypothesis 6, and hypothesis 8, but not supported by hypothesis 2, hypothesis 3, and hypothesis 7.

With regard to the result of the relationship between macroeconomic and regulatory determinants and Islamic bank deposits, the positive and significant variable is gross domestic product (GDP), whereas the inflation has a negative and significant relationship. However, the variables of unemployment, overnight policy rates (OPR) and application of section 2 IFSA are not significant at any level. In addition, the relationship between macroeconomic and regulatory determinants and Islamic bank deposits are associated significantly with 14 Islamic banks, each with different intercepts, which clarifies a firm-specific effect. Therefore, hypothesis 9, hypothesis 10, and hypothesis 12 supported the research findings on the second objective but not supported by hypothesis 11 and hypothesis 13.

Furthermore, the moderated effect of business enterprise depositors positively strengthens the relationship between net profit margin (NPM) and Islamic bank deposits and significant at 1% level. This finding is consistent with hypothesis 14, implying that Islamic banks can strengthen the liquidity creation of Islamic bank deposits with higher NPM in the presence of higher business enterprises deposits. These relationships are associated significantly with 11 Islamic banks, each with different intercepts, which clarifies a firm-specific effect. Therefore, for the third research objective, the empirical results support the final hypothesis 14 in this research.

This chapter also presents the findings of three econometric models to verify and confirm the robustness of the obtained results of panel data regressions with pooled ordinary least square, random, and fixed effects models. Moreover, the sensitivity tests confirm the robustness of the obtained results of the initial panel data

regressions. In order to verify the robustness of the statistical model for every objective, the additional panel data regressions with firm effects using Least Square Dummy Variable (LSDV) are examined and presented. The empirical results verify the robustness testing for the preferred model in each relationship. In conclusion, all three research objectives have been successfully accomplished and adequately addressed.



CHAPTER FIVE

CONCLUSION

5.0 Introduction

This research examines the hypotheses that the performance of deposits in Islamic banks is impacted by the three key determinants: bank-specific financial factors, macroeconomic conditions, and regulatory considerations. In addition, this study integrates one type of customer: business enterprise depositors, as the moderator to test the influence of the variable's relationship. This research also discusses the role of Islamic banks in effectively using Islamic bank deposits and the determinants that influence the ability to accomplish their responsibilities as liquidity creators and financial intermediaries between depositors and other bank clients. Above all, this research looks into the fundamental concept behind Maqasid Shariah, explicitly focusing on exploring the role of Islamic bank deposits.

This chapter presents a concise overview of the study outcomes and a comprehensive analysis of the primary discoveries. Additionally, it emphasizes the related theoretical, conception and the policy implications that contributed to the identifying of specific recommendations. This chapter also underlines the research limitations and motivations for a wider scope of future research. Finally, this chapter brings the research journey to its conclusion.

5.1 Summary of findings on Research Objectives

The empirical findings of this research are by analyzing the dataset of 16 Islamic banks in Malaysia throughout the examined period from 2000 to 2021. The empirical results provide evidence that Islamic bank deposits are impacted significantly by its bank-specific financial determinants (net profit margin, Herfindahl-Hirschman Index (HHI), financing-to-deposit ratio and bank size) and macroeconomy determinants (gross domestic products and inflation). Whilst the regulatory determinant (the application of Section 2, IFSA 2013) is insignificantly impacted the Islamic bank deposits. Additionally, the firm effect regressions model with robust standard error statistically indicating the positive role played by Islamic banks themselves. Moreover, the panel data regressions with the random effects model show that the moderating variable of business enterprises depositors only strengthens one independent variable: net profit margin in the significant statistical relationship with Islamic bank deposits.

The first empirical model in this study measures the association between bank-specific financial key determinants and Islamic bank deposits. The first statistical analysis in Chapter Four shows the positive and significant determinants are net profit margin (NPM), Herfindahl-Hirschman Index (HHI), and bank size. In contrast, the significant financing to deposit ratio (FDR) determinant has a negative association. However, the variables of return on assets (ROA), return on equity (ROE), capital adequacy ratio (CAR), and non performing financing (NPF) are not significant at any level. In addition, the relationship between bank-specific financial determinants and Islamic bank deposits is associated significantly with 13 Islamic banks, each with

different intercepts, which clarifies there is a firm-specific effect. Therefore, the research findings on the first research objective are supported by hypothesis 1, hypothesis 4, hypothesis 5, hypothesis 6, and hypothesis 8, but not supported by hypothesis 2, hypothesis 3, and hypothesis 7.

Regarding the second empirical model in this study, which measures the association between macroeconomic and regulatory determinants with Islamic bank deposits. The findings demonstrate that the positive and significant variable is gross domestic product (GDP), whereas inflation has a negative and significant relationship. However, the variables of unemployment, overnight policy rates (OPR) and application of Section 2 IFSA are not significant at any level. In addition, the relationship between macroeconomic and regulatory determinants with Islamic bank deposits are associated significantly with 14 Islamic banks, each with different intercepts, which clarifies a firm-specific effect. Therefore, hypothesis 9, hypothesis 10, and hypothesis 12 supported the research findings on the second objective, but hypothesis 11 and hypothesis 13 are not supported.

Furthermore, the third empirical model in this study measures the moderated effect of business enterprise depositors in the relationship between NPM and Islamic bank deposits, and the finding is positive and significant. This finding is consistent with hypothesis 14, implying that Islamic banks can strengthen the liquidity creation of Islamic bank deposits with higher NPM in the presence of higher business enterprises depositors. These relationships are associated significantly with 11 Islamic banks, each with different intercepts, which clarifies a firm-specific effect. Therefore,

for the third research objective, the empirical results support the final hypothesis 14 in this research.

This research presents the findings of three econometric models to verify and confirm the robustness of the obtained results of panel data regressions with pooled ordinary least square, random, and fixed effects models. Moreover, the sensitivity tests confirm the robustness of the obtained results of the initial panel data regressions. In order to further verify the robustness of the statistical model for every objective, the additional panel data regressions with firm effects using Least Square Dummy Variable (LSDV) are examined and presented. The empirical results verify the robustness testing for the preferred model in each relationship. In conclusion, all three research objectives have been successfully accomplished and adequately addressed.

5.2 Critical reflections on the Research Findings and Theoretical Considerations

5.2.1 Profitability Factors

Comprehensive knowledge on the influence of various bank's profitability elements may assist banks and stakeholders in making significant choices to enhance their strategic decision making. For instance, the movements in profitability elements such as net profit margin (NPM), return on equities (ROE) and return on assets (ROA) may impact the liquidity creation of Islamic bank deposits.

The abovementioned profitability elements are the most commonly used tool to measure a bank's profitability since it is the primary traditional function of bank's

major performances. From the financial performance report, the three elements can describe the level of efficacy of the bank's management as a financial intermediary. When deciding whether or not to invest their money in a bank, investors and depositors frequently consider profitability elements, among other factors. Thus, depositors may use a bank's profitability and performance outcomes to guide their decision-making regarding the bank's efficacy on current strategies, areas of improvement and identify promising avenues for growth.

This study is considered as the first attempt in academic research to utilize the relationship between NPM with bank deposits, precisely in Islamic banks. Consistent with hypothesis 1, the results demonstrate that Islamic banks generate higher Islamic bank deposits with higher NPM. This signifies that the volatility of Islamic bank deposits is significantly impacted by Islamic banks' profit efficiency in Malaysia. Therefore, in line with the theory of financial intermediation, this finding emphasizes how crucial it is for Islamic banks as financial intermediators to consistently maintain a positive and encouraging net profit margin to keep existing depositors and draw in new depositors.

In brief, Islamic banks' capacity to attract deposits is subject to several profitability factors, including the banks' revenue efficiency and financial performance. Moreover, risk management practices and distinctive business strategies. May enhance their ability to sustain a favorable profitability element and attract deposits. Thus, concerning the Islamic banks' efficacy, based on the empirical findings and reviews from previous research, this study contends that Islamic banks have

potentially shown the capacity to provide greater profitability via their revenue-generating endeavors, hence potentially fostering increased deposit inflows.

5.2.2 Liquidity Factors

The empirical results of hypothesis 5 indicate that a greater concentration of Islamic bank deposits in the banking market structure tends to improve the liquidity creation of Islamic deposits. The obtained results from this research align with the liquidity creation theory, as applying a higher market structure would promote a bank placement attitude. Accordingly, factors related to bank performance and market structure can affect the magnitude of Islamic deposits. Furthermore, a higher Herfindahl-Hirschman Index (HHI) for concentrated banking market share, indicating a monopolistic Islamic banking market structure such as in Malaysia. This discovery implies that an increased concentration of resources may be linked to enhanced bank performance and fostering more deposit inflows. Therefore, the relationships between HHI and Islamic bank deposits are explained by a representation of banks' management, operational, and market competition. Thus, knowing how the Islamic bank's concentration in Malaysia determines the liquidity of Islamic bank deposits is substantial.

Regarding hypothesis 6, the empirical results indicates that the greater level of financing to deposit ratio (FDR) causes a negative influence on liquidity creation in the case of Islamic bank deposits. Accordingly, this research result suggests that more customer financing leads to fewer Islamic bank deposits as banks will mobilise a greater percentage of their deposits for financing activities. The FDR is a metric used

to assess the degree to which an Islamic financial institution depends on external sources of funding to support the financing operations in proportion to its deposit base. Typically, a higher FDR suggests that the bank has deficiencies in deposits liquidity to cover its short-term financing requirements as more funds are tied up in long-term financing and investment contracts. In contrast, a bank may not generate as much return as it might if the ratio is too low. Whereby a lower ratio signifies a bigger proportion of customer deposits relative to financing products. As of yet, prior works of literature regarding the relationship between FDR and Islamic bank deposits are limited and scarce. Thus, this research provides new findings on the influence of FDR on bank deposits of Islamic banks.

From the finance and accounting perspectives, a positive relationship exists between the amount of funds allocated by Islamic banks for financing purposes and their capacity to generate greater revenues. Therefore, this research result suggests that the greater FDR might potentially impact the financial performance of Islamic banks in a positive way. Moreover, previous study reveals that the FDR had a noteworthy and favorable impact on the distribution of funds by Islamic banks towards the sector of micro, small, and medium businesses. This discovery suggests that with greater FDR, Islamic banks might potentially provide more financing in a rise of small medium industries. Nevertheless, the greater FDR is positively impacting the growth of assets expansion inside Islamic banks, then favorably applies the Maqasid Shariah concept through Islamic social finance. Consistent with the concept in Islamic banking principles, these findings provide statistical evidence that supports the theory of Islamic banking where Islamic banks are required to make a direct and effective impact

on the real economy through operating in accordance with Shariah (Islamic law). On a precautionary note, higher FDR works effectively if the funds are channeled into high quality financing and investments.

Hypothesis 8 is supported as bank size, which is represented by total assets in Islamic banks, has a positive relationship and is significant with Islamic bank deposits. The reported positive and significant relationship between bank size and deposit is consistent with the empirical findings from previous studies (Winarto et al., 2022; Thao & Thanh, 2021; Legas et al., 2021; Ferrouhi, 2017; Demirguc-Kunt & Huizinga, 1999; Kaufman, 1972). Larger banks often create higher liquidity levels since they have more opportunities to diversify their deposits and investment products. Larger banks also have a tremendous possibility of offering financing products since they have substantial liquidity and enjoy economy of scale. Nevertheless, bank management is accountable to manage their assets efficiently and contributes to a rise in liquidity creation of Islamic bank deposits. Consequently, larger Islamic banks may be able to relax their focus in expanding and extending financing activities, and put more efforts in boosting the amount of their liquidity creation in Islamic deposits through assets management efficiencies. Based on these, it can be confidently stated that the obtained positive and significant relationship between bank size and liquidity creation is consistent with the theoretical and conception of the existing literature in Chapter Two.

5.2.3 Macroeconomic and Regulatory Factors

Confirming hypothesis 9, the regressions result shows a significantly positive association between gross domestic products (GDP) and Islamic bank deposits. This positive effect of GDP and variations level of bank deposits aligns with the past literature (Asante et. al., 2023; Abdulazeez et. al., 2018; Boadi et. al., 2015). Thus, GDP has a substantial impact on deposits in Islamic banks. The positive relationship confirms previous research results that a robust economy increases Islamic bank deposits. Moreover, these results confirmed that Islamic banks can generate more liquidity through Islamic deposits with higher GDP, which further contributes significantly to economic growth in a country.

Concerning inflation, a significant and negative correlation finding as predicted in hypothesis 10, which implies that increased inflation decreases the liquidity of Islamic bank deposits. The empirical findings show that as inflation rises, consumers demand more cash for daily expenses and consumptions, which has a negative impact on their overall savings and deposits, even though banks boost their rate of returns to attract more depositors. However, some previous studies reported that the general idea of inflation does not conflict with the relationship with banks deposits. The contradictory previous results may be due to time specifics, as Islamic banks' deposits rate of return during economic crises may not be as attractive as conventional deposits in the examined period. Therefore, the main findings for this research still suggest that inflation negatively impacts Islamic bank deposits.

Hypothesis 13 regards positive relationship exists between the application of Section 2, Islamic Financial Services Act 2013 (S2IFSA) and Islamic bank deposits. The result contradicts hypothesis 13. The fixed effect regressions results show the relationship between S2IFSA and Islamic bank deposits is negative and statistically insignificant. Although this finding is insignificant, the negative relationship suggests an interesting interpretation. Since S2IFSA separates deposits and investment accounts, customers tend to place their funds in investment accounts than deposit accounts since investment account's return is more attractive than the deposit returns. This probably explains the negative relationship between S2IFSA and deposits. Nevertheless, compliance with regulatory and supervisory requirements of S2IFSA for greater openness improves the monitoring process of banks and thus, prevents bank runs by increasing the public trust in the banking sector and reducing the risk-taking behavior of banks, which may consequently promote banking financial stability. Indirectly, the stability of Islamic banks instills greater confidence among the public which encourages greater Islamic bank deposits

5.2.4 Moderating Effects of Business Enterprises Depositors

The review of past literature identifies notable patterns and limitations regarding the moderating effects of customer types. Explicitly, although there has been a growing interest in Islamic banking customer behavior, previous research has not adequately examined the potential moderating effects of depositor types or characteristics. The scarcity of related information has been a challenge for academics and researchers in comprehensively elucidating the factors contributing to depositors' views and

intentions about the performance of Islamic banking. This study proposes a novel moderating variable, namely business enterprises depositors, in light of the Islamic bank deposits' determinants framework..

5.3 Implications and Recommendations for Islamic Banks and Policy Makers

5.3.1 Profitability Factors

The reliance on deposits for financing activities is a significant factor influencing bank profitability. Consecutively, banks should act on this insightful information to largely depend on deposits as a primary source of financing and investment, and not often rely on other funding sources such as from equities.

Nevertheless, the positive association between profit margin and deposits in Islamic banks implies that Islamic banks should be prudent in managing their operational expenses and risk measures taking into account the influence of internal and external factors on bank deposits performance. Hence, it is not only subject to the operational expenses, but the effect of several other factors too, including regulatory considerations, market structure and economic conditions. Prior research revealed that the impact of the global financial crisis is varied between Islamic banks and conventional banks. For example, during the financial crisis 2008, the business model of Islamic banks had a significant role in mitigating the adverse effects on profitability. However, inadequate risk management practices in Islamic banks resulted in a more substantial decrease in profitability in 2009 as compared to conventional banks. Therefore, it is crucial to acknowledge that the relationship may differ based on the

banks' distinct attributes and internal factors, as well as the external aspects of the banking sector.

As discussed in Chapter Two, Islamic banks need to be profitable because customers are more likely to place their deposits in profitable well governed Islamic banks. Being Islamic banks, they should portray clearly the observance of Shariah compliance practices. Policy makers should continue to introduce shariah governance framework as these factors (profitability, good governance, Shariah compliance) stimulate greater confidence to depositors of Islamic banks.

5.3.2 *Liquidity Factors*

This research finding indicates that higher deposit levels may be related to more intense market competition, as a lower HHI shows. On the other hand, a higher HHI in the banking industry is linked to a monopolistic structure and may have a detrimental effect on bank performance. Therefore, Islamic banks should take note that both conditions of HHI, whether a high or low concentration level, could result in higher deposit levels depending on the liquidity management strategies each bank decides. Hence, this implies that banks' conditional strategies in market concentrations could potentially result in higher deposit levels as customers have more options to choose banks which meet their preferences.

Prior researchers examined the dynamics of demand and supply in the context of Islamic banking deposits, and concluded that the worldwide market for Islamic banking deposits exhibits stability and convergence. Consequently, banks must

prioritize pricing strategies and establish effective measures to attract deposits and maintain stability. It was determined by previous chapters that the Malaysian Islamic banking business operates under a market structure characterized by monopolistic competition, exhibiting a moderate level of market concentration. Hence, this finding implies that Islamic banks have even playing fields among them to compete for deposits from customers.

Islamic deposits are depositor's funds that are placed in Islamic banks, which adhere to the rules of Shariah Law where the giving or receiving of interest, also known as *riba* is forbidden. This implies that Islamic banks should provide a range of deposit instruments that adhere to the principles of Islamic banking, including profit-sharing investment accounts and Islamic savings accounts. The connection between FDR and Islamic bank deposits suggests that the business model used by Islamic banks, which strongly emphasizes profit-sharing and risk-sharing agreements is favoured by customers and investors. This may be the driving force for customers to place higher deposits in Islamic banks. However, this study shows that Islamic banks often exhibit a greater reliance on equity-based financing, which potentially influence FDR. Islamic banks should wary that higher equity-based financing may lead to a reduced FDR compared to conventional banks that mostly depend on debt-based funding. Thus, Islamic banks should practice adequate risk management measures in selecting and approving projects to be financed in order to obtain good equity returns.

The size of a bank is shown to have a positive impact on its deposit levels. A favorable correlation between bank size and deposits has also been found in several

previous research. Nevertheless, smaller banks may be able to generate a proportionally higher increase in deposit growth than larger banks depending on their marketing strategies. This could be advantageous to smaller size banks. On the other hand, larger banks have a higher deposit level since they often have a broader customer base and more extensive branch networks, allowing them to attract more deposits. However, a negative correlation between the size of banks and the amount of deposits a bank holds indicates that larger banks tend to favor a decrease in deposits and an increase in wholesale financing. Larger Islamic banks provide more advantages in risk mitigation and financial stability than their smaller counterparts. Therefore, Islamic bank's size could impact its deposit levels. Therefore, this research suggests that Islamic banks need to be large (in assets) because being large they can benefit more from having better competitive advantages and higher customers' confidence. This finding supports the current strategy of mergers between small Islamic banks to be large Islamic banks.

5.3.3 Macroeconomic and Regulatory Factors

In the context of Islamic banking sector, Islamic deposits may have a favorable relationship with GDP. GDP growth is associated with enhanced economic development, which may increase bank deposit-taking capacity. Thus, financial institutions including Islamic banks, are very important in facilitating and promoting the economic development of a country. From this research, there are significant connections between GDP, the economy's growth, and the generation of deposits.

Thus, Islamic banks should continue to monitor the impact of economic performance on their banking operations and product pricing.

With regards to the effects of inflation on deposits in Islamic banks, many of the existing references suggest a negative relationship between inflation and Islamic deposits. From the previous analyzed relationship, results demonstrate inconsistencies with the broader conceptual in economic framework concerning inflation and saving and consumption patterns. As inflation increases, depositors may reduce their deposits in Islamic banks due to increased consumption needs. However, during financial crises, depositors may turn to Islamic banks as a safe haven, leading to an increase in deposits. As such, Islamic banks and regulators should be sensitive to these changes as factors such as inflation, rates of return, industrial production, and macroeconomic stability can also influence the behavior of Islamic deposits. Interestingly, a past study also reports that financial crises positively affect total deposits in Islamic banks. This suggests that during times of crisis, depositors may seek the safety and stability offered by Islamic banks, leading to an increase in deposits.

The introduction of the Islamic Financial Services Act (IFSA 2013) has significant consequences for financial institutions, regulators, and policymakers in Malaysia. The regulatory structure fosters Shariah compliance, enhances transparency, and ensures financial stability within the Islamic banking industry. Therefore, the regulatory requirements implemented by IFSA 2013 have significant consequences for the disclosure and reporting procedures on Islamic deposit products.

The application of Section 2 of IFSA 2013 have direct impact on Islamic deposits. The Act emphasizes the importance of Shariah compliance, enhances transparency and financial reporting, and provides a clear distinction between deposit and investment accounts. The implementation of IFSA 2013 has significant implications for Malaysia's Islamic banking sector in promoting stability and safeguarding Shariah-compliant practices. The previous references provided light on the factors influencing Islamic deposit behavior and fluctuations. While the references do not directly address Section 2 of IFSA 2013, they contribute to understanding the dynamics of Islamic deposits and the factors that influence deposit behavior in Islamic banks. Additional examination from this research focusing on the relationship between Section 2 of IFSA 2013 and Islamic deposits provides more comprehensive insights into making Islamic banks as ethical, social responsible investment entities.

The reviewed literature in Chapter Two suggests that regulatory Shariah requirements may influence the behavior of Islamic depositors. In order to attract and keep depositors, Islamic banks must ensure compliance with regulatory duties while simultaneously providing competitive rates of profit. This should overcome difficulties arising from lack of a standardized framework for disclosing investment deposit accounts as reported in previous studies. Therefore, it is recommended that regulatory bodies adopt the standards set out by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI). This adoption would enhance transparency and ensure uniformity in the disclosure practices about investment deposit accounts of Islamic banks. This research further emphasizes the significance of the Shariah compliance requirements, as stipulated by the Section 2 of

IFSA 2013, in guiding the operational activities of Islamic banks products particularly Islamic deposits.

In conclusion, this research suggests the potential policy measures to be considered by Islamic banks and policy makers should include Islamic deposit price stabilization in the market, the creation of appealing and user-friendly Islamic deposit products, and the establishment of robust Shariah operational framework specifically for Islamic bank deposits.

5.3.4 Moderating Effects of Business Enterprises Depositors

This research highlights the significance of business enterprise depositors in increasing the generation of total deposits, thereby enhancing the liquidity and profitability of Islamic banks. This opinion is inferred from the finding that business enterprise depositors is a significant mediator in this study's research framework. It is suggested that Islamic banks should concentrate on attracting more business depositors and capitalize on the greater deposit volume generated by them. Understanding the role of business depositors as a moderating variable is essential for Islamic banks to develop effective strategies and enhance their financial performance.

5.4 Implications and Recommendations for Academic and Researchers

5.4.1 Profitability Factors

The relationship between profitability and liquidity of deposits may vary across different contexts, such as the type of banks and banks' governance. Deposits have a

crucial role and possess a substantial explanatory capacity in clarifying the factors influencing profitability. Most past studies concentrated on how deposits affected bank profitability, paying little attention to the fact that profitability may also affect the deposits' liquidity creation. This research introduces three profitability factors to determine the relationship between the profitability and Islamic bank deposits. Accordingly, NPM is the most noteworthy independent variable to show the profitability performance of Islamic banks, together with other metrics for profitability, notably the return on assets (ROA) and return on equity (ROE). For researchers, these three new relationship studies are needed to understand the empirical relevance with related theories and test the hypothesis's significance. Comprehending these interconnections is vital for formulating well-informed judgments inside the Islamic banking sector. Even though the findings reveal several insignificant relationships, it is suggested that the same relationship will be examined by academicians in different context such as countries, period and specific types of deposits to gather clear Islamic bank deposits performance.

5.4.2 Liquidity Factors

It is important to note that the relationship between market concentration, as measured by the HHI, and bank deposits is complex and can be influenced by factors such as regulatory policies, customer preferences, and economic conditions. Bank internal factors such as revenue diversification and profitability can also play a role in attracting deposits. A higher HHI in a more concentrated market may suggest a less competitive market with higher deposit levels due to market power. A lower HHI may

indicate a more competitive market with potentially higher deposit levels due to increased customer options and competition among banks. In brief, while there is limited direct research on the relationship between the HHI and Islamic bank deposits, this is new findings for academicians as HHI can provide insights into the competitive landscape of the banking industry, which can indirectly impact deposit levels. Therefore, it is necessary for academicians to conduct further research explicitly focusing on the relationship between the HHI and Islamic deposits as it is needed to provide more conclusive evidence.

Without a doubt, sustaining long-term economic development in an economy is contingent upon stimulating banking financial operations. This observation is supported by previous studies showing a significant correlation between banks' financing activities and economic development. Hence, it is imperative to analyze and examine the correlation between FDR and Islamic bank deposits, as this relationship may serve as a crucial means of evaluating a bank's liquidity and financial well-being. To date, a scarcity of research establishing a direct connection between the FDR and Islamic bank deposits. Therefore, examining Islamic banks' financial health and resilience is essential and recommended in order to comprehend the relationship between FDR and Islamic deposits better.

5.4.3 Macroeconomic and Regulatory Factors

In brief, it may be inferred that the correlation between GDP and Islamic deposits is intricate and contingent upon several contextual factors. Existing literature indicates that an increase in GDP can lead to elevated bank deposits, showing the expansion and

advancement of the economy. However, the nature of this association may differ based on country-specific characteristics and regulatory requirements. A comprehensive comprehension of this intricate interrelationship is paramount for Islamic banks and stakeholders in effectively controlling deposit levels and fostering economic development. Further study is required to examine this relation across many nations and geographical areas for a more thorough comprehension.

Previous studies suggest that inflation may positively and negatively affect bank deposits. On one hand, inflation may incentivize individuals and businesses to deposit their funds in banks to preserve their money's value. On the other hand, higher inflation levels can hinder the growth of bank deposits and may require banks to adjust their deposit rates accordingly. The effects of inflation on bank deposits might differ based on many circumstances, such as the country, type of banking system, and the overall economic environment. Hence, it is essential to extend the research on the relation between inflation rate and the deposit performance of Islamic banks in Malaysia covering a longer period of study. The significance of comprehending the influence of inflation on the efficacy of Islamic bank deposits in Malaysia is of substantial relevance, since the correlation between inflation and bank deposits is extensive and diverse.

The relationship between unemployment and bank deposits is complex and can be influenced by factors such as the behavior of small firms, bank operations and development, and the specific context of the economy. Understanding these dynamics is crucial for academics and researchers in order to recommend effective strategies for

promoting banking sectors' stability, employment, and economic growth. Preceding studies on the relationship between the unemployment rate and bank deposits either in conventional or Islamic banks, are still inadequate. Nevertheless, it is essential to note that the relationship between unemployment and bank deposits is not always straightforward. The preceding studies provide insights into the relationship between bank deposits and various factors. None of the provided references specifically focus on the relationship between unemployment and Islamic deposits. Unexpectedly, almost no published empirical studies have revealed the relationship between unemployment and Islamic deposits. Therefore, further research is needed to explore the link between unemployment and Islamic deposits.

5.4.4 Moderating Effects of Business Enterprises Depositors

In numerous studies, customers' attitudes have been identified as one of the most important aspects influencing the Islamic banking business. Customers' behavior and Islamic bank qualities closely related to banks' competitiveness. Customers' impressions towards the value or characteristics of banking will impact whether they select conventional or Islamic banks to place their money. Therefore, it is suggested to academics and researchers shall further extend their theoretical knowledge by closely recognize and comprehend which type of depositors may positively impact the Islamic banks' deposit performance.

5.5 Limitations and Future Research

Despite the importance of the obtained findings on the determinants of Islamic bank deposits performance, this research remains with some limitations. Given that this

research consideration examined the determinant factors of four major elements: profitability, liquidity, macroeconomics, and regulatory - an approach that is regarded as novel in academic research. However, the scarcity of pertinent references or studies pertaining to specific variables continues to be one of the most significant limitations of the researcher. Having access to up-to-date and comprehensive empirical studies, for instance, could provide additional insights and provide a solid foundation for extrapolating the findings of the research.

It is imperative to acknowledge that the scope of this study is limited to the Malaysian context, thus its relevancy to other countries or regions may not be directly applicable. Depending on the circumstances and variables, the relationship between internal and external determinants and Islamic deposits may differ. It is paramount to acknowledge that performance of Islamic bank deposits can be impacted by a multitude of factors, including the circumstances of the nation or area being examined. The relationship may also be influenced by the regulatory frameworks, economic and political conditions, the structure of the Islamic banking system, and the growth of the Islamic finance industry. It is critical for Islamic banks, policymakers, and stakeholders in the Islamic banking and finance sector to possess a comprehensive understanding of these dynamics.

In conclusion, this research aimed at filling an essential gap; as modelling and empirical studies on the determinants of Islamic bank deposits performance are rather limited; particularly by examining in depth perspectives of four major elements such as profitability, liquidity, macroeconomics and regulatory.

Overall, the findings of this research suggest that internal factors have a more significant effect on the performance of Islamic bank deposits than external factors. Hence, in order to achieve financial health, stability, and growth, Islamic banks ought to comprehensively prioritize bank-specific financial determinants that ensure liquidity from stable growth in deposits over both short and long periods of time. The efforts shall be performed while also taking macroeconomic and regulatory factors into meticulous consideration.



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