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## Article

# The impact of COVID-19 on the performance of Islamic banks in the MENA region

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# THE IMPACT OF COVID-19 ON THE PERFORMANCE OF ISLAMIC BANKS IN THE MENA REGION

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## ABSTRACT

**Purpose** — This research explores the impact of COVID-19 on the financial return of Islamic banks (IBs) in nine countries located in the Middle East and North Africa (MENA) region. It also examines the determinants of IBs' profitability during stable and uncertain periods, namely before and during the development of coronavirus.

**Design/Methodology/Approach** — The financial data of this paper were collected from annual reports of IBs and the Orbis Bank Focus database over four years: 2018, 2019, 2020 and 2021. Descriptive statistics were used to examine the progress of IBs' performance from 2018 to 2021. The t-test was employed in this research paper to compare the financial proxies of IBs, and the multiple regression model was used to assess the determinants of IBs' performance before and during the development of coronavirus in MENA countries.

**Findings** — The empirical findings show that IBs in MENA countries were dramatically influenced by the development of COVID-19. All financial proxies of IBs like financial return and liquidity experienced a sharp drop during the lockdown period. The empirical findings also indicate that the financial situation of IBs in 2021 became close to the pre-pandemic situation but was nonetheless below the banks' performance prior to the pandemic period (2018-2019). Finally, the results show that the determinants of IBs' return were not the same during stable and uncertain periods. During the COVID-19 period, credit risk, managerial efficiency and oil price were the significant determinants of IBs' profitability. Before the development of COVID-19, besides the elements of credit risk, managerial efficiency and oil price, liquidity risk and bank size were also found to have an influence on IBs' profitability.

**Originality/Value** — The research offers new insights to top managers in IBs to increase the institutions' financial return and mitigate the negative shock of crises by managing several factors such as credit risk and managerial efficiency.

**Keywords** — Capital structure, COVID-19, Islamic banks, MENA, Oil price, Profitability

**Article Classification** — Research paper



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## INTRODUCTION

Islamic banks (IBs) have been found to be more resistant during unstable and uncertain periods than their non-Islamic counterparts. Several studies have shown that Islamic financial institutions (IFIs) and IBs performed better than other banks during the global financial crisis of 2008–2009 (Beck *et al.*, 2013; Alqahtani *et al.*, 2017; Nurfalah *et al.*, 2018). El-Chaarani and Ragab (2018) also argued that IBs succeeded in controlling their liquidity risk and managing their profitability and financial structure during the Arab political crisis in several Middle East and North Africa (MENA) countries. For the authors, the conservative Islamic principles were the factors that led IBs to reduce the impact of uncertainty.

The development of coronavirus cases across the globe and the long lockdown periods recently increased the risk level of IFIs. A large number of bank customers have not been able to pay back their debts because they lost their jobs during the quarantine period (Hasan, 2020). Many IBs have thus faced various macroeconomic risks (Fakhrunnas *et al.*, 2021) and huge withdrawals of funds by their depositors (Cahyono *et al.*, 2021).

In MENA countries, the pressure of the international health problems and lengthy lockdown period on the economic situation and IBs started with the development of COVID-19 cases in countries such as the United Arab Emirates (UAE), Kuwait, Qatar and the Kingdom of Saudi Arabia (KSA) in March 2020. According to the World Bank report (2021), the pandemic period caused serious damage to many economic sectors, including oil, tourism, transportation and banking in MENA countries. For Hassan *et al.* (2021), the economic, financial and social influence of COVID-19 has amplified the pressure on IFIs in the MENA region. Mihajat (2021) and Almonifi *et al.* (2021) also confirmed the negative influence of coronavirus development on IBs in MENA countries. They argued that IBs should manage and control their liquidity buffer and capital structure to deal with various economic challenges during the COVID-19 outbreak. Nonetheless, despite the financial damage that COVID-19 caused to IFIs, Hassan *et al.* (2021) argued that IBs will have a crucial role during and after the lockdown period in MENA countries. They stated that IBs can sustain and ease the negative financial impact of the virus on small and medium enterprises (SMEs) and individuals.

While there are past studies which have discussed the influence of COVID-19 on IBs in the MENA region, there is still a gap in the literature that compares the determinants that affect IBs' profitability before and during the evolution of COVID-19 and that examines the effect of COVID-19 on specific indicators of IBs in MENA countries. This paper, therefore, specifically seeks to achieve the following research objectives:

1. To explore the influence of COVID-19 on various financial and operational indicators of IBs in the MENA region, namely liquidity risk, capital structure, credit risk, managerial efficiency, and profitability.
2. To assess the determinants of IBs' performance in several MENA countries before and during the healthcare crisis period.

This research makes several contributions to the literature:

1. It develops the extant literature and theories of IBs by studying the key determinants of IBs' performance before and during the COVID-19 development.

2. It compares different financial indicators of IBs before and during the development of the global healthcare crisis. It helps to explore and analyse the impact of coronavirus on return, risk, and capital structure of IBs.
3. The empirical result of this research will be helpful for bank CEOs and executives to optimise the operational behaviour and financial structure of IBs in the MENA region, mainly in the post-coronavirus period.

The rest of the research paper is structured as follows: the second section comprises the review of literature on financial resistance of IBs during crises and the determinants of IBs' profitability. The third section presents the source of data, the sample of IBs and variables (dependents and independents) examined, and the research methodology. Then, the empirical findings are discussed. The last section concludes the research.

## LITERATURE REVIEW

### Financial Resistance of Islamic Financial Institutions during Crises

Empirical studies assessing the risk and overall performance of IFIs have shown that these institutions have a high capacity of financial resistance during crises (Abdulle & Kassim, 2012; Rafiuddin & Alam, 2012; Mansor & Syed-Aun, 2017; Mihajat, 2021). They also revealed that IBs perform better than their conventional counterparts during periods of instability (Ftiti *et al.*, 2013; El-Chaarani & Ragab, 2018; Almonifi *et al.*, 2021).

Mokhtar and Laldin (2009) argued that Islamic bankers can reduce the financial risk level because they work based on the 'assets market' principle whereas conventional banks operate based on the 'money market' principle. They stated that IBs do not have a problem related to transparency and information asymmetry since they follow Islamic laws that prevent elements of doubt and uncertainty (*gharar*). It is noted that a major problem during the financial crisis of 2008 was related to the lack of transparency in conventional banks.

Some scholars consider that IBs have a high ability to resist during crisis periods because they are considered equity-based institutions (Abdul-Majid *et al.*, 2017). In IFIs, depositors are considered shareholders since their investment deposits do not rely on any type of asset guarantee or fixed interest rate. IB depositors receive a pre-defined percentage of bank revenue in case of profit. In the opposite case, depositors must share the loss with the bank.

Several studies reveal that the nature of Islamic financial contracts and financing methods used during the crisis is the reason behind the financial resistance of IBs (Husain *et al.*, 2015). The employment of the profit-and-loss (P&L) sharing principle and other Islamic principles through Islamic financial contracts can mitigate the financial risk and improve the overall return of IBs (Hassan & Kayed, 2009). In the Malaysian context, Husain *et al.* (2015) showed that the use of P&L contracts like *mushārah* and *muḍārabah* can enhance the productivity of IBs during the crisis. Abusharbeh (2014) revealed that *murābahah*'s funding methods enhanced the profitability of Indonesian IBs. For Abusharbeh (2014), a *murābahah* contract has low risk compared to other financing methods employed by other financial institutions.

Throughout the COVID-19 development, IFIs in the MENA region and other countries like Indonesia and countries in Sub-Saharan Africa have been highly affected by the economic recession and long lockdown periods. Hasan *et al.* (2021) have studied the influence of the

healthcare crisis on the stock index and stock prices. They showed that the Sharī'ah screening process failed to ensure protection to Islamic stock markets during the economic turmoil. They recommended bankers to take precautions in employing future financial management measures to boost market confidence.

Salsabilla *et al.* (2021) explored the financial shock of the coronavirus outbreak on Indonesian IBs. They showed that IBs in Indonesia were able to successfully manage their operational and credit risks and that they mitigated the negative impact of the crisis, thus sustaining their returns during the pandemic period. Nugroho *et al.* (2020) confirmed the negative influence of the development of COVID-19 and long lockdown periods on Indonesian IBs. They recommended bankers to improve the liquidity level and restructure the capital of IBs to reduce their financial risk throughout COVID-19.

Almonifi *et al.* (2021) stated that the lengthy lockdown period had a marginal influence on IBs in the Kingdom of Saudi Arabia (KSA). They argued that IBs can mitigate any economic and financial crisis. Akkas and Al Samman (2021) showed that IBs located in the Gulf Cooperation Council (GCC) were less exposed to the negative financial impact of the coronavirus than other banks. However, the resilience of the IBs during the pandemic period was not as high as in the case of the international financial crisis of 2008–2009. The scholars recommended bankers and regulators in GCC countries to implement reforms and regulations to enhance the resilience of IBs.

Despite the existence of several studies that reveal the financial shock of the COVID-19 crisis and lockdown period on the overall financial returns of IBs, the literature review does not present any global research that explores the determinants of IBs' returns in the MENA region. Similarly, there is no extant research examining the influence of the coronavirus crisis on the financial indicators of IBs in MENA countries. Therefore, this paper fills these knowledge gaps by addressing the financial influence of COVID-19 on different indicators of IBs and by studying the key success factors of IBs' profitability through the pandemic period.

### **Determinants of Bank Performance**

Berger (1995) was the first scholar who stated that bank revenues are influenced by both external and internal factors. He argued that the key success factors of each bank could vary due to many reasons such as economic conditions and bank characteristics.

According to entrenchment, stewardship, agency and trade-off theories, the profitability of any firm is highly correlated with its financial behaviour, capital structure and financial management system (Jensen & Meckling, 1976; Myers, 1984; Myers & Majluf, 1984; Shleifer & Vishny, 1988; Donaldson & Davis, 1989). Thus, to enhance the profitability of financial institutions, managers must optimise their capital structures and decrease their financial risks. Jensen and Meckling (1976) revealed that a high level of financial debt could lower agency and transaction costs because debtholders can monitor the manager and lead him to reduce his private benefits.

Under the market power (MP) and structure conduct performance (SCM) theories, the efficiency of any financial and non-financial institution is also the result of industry and economic conditions (Bain, 1956; Berger, 1995; Berger & Hannan, 1997). Therefore, it is

impossible to analyse the profitability of banking firms without considering the impact of the external environment.

This paper assesses the influence of the following factors on the financial profitability of IBs in the MENA region:

### ***Internal Determinants***

#### ***Capital Structure and Adequacy***

Capital structure and adequacy ratios show the available capital of banks that can be employed to protect depositors. An IB characterised by a high capital level is considered able to absorb the negative impact of financial difficulties (Masood & Ashraf, 2012). The bankruptcy risk is considered very low when capital adequacy ratios are above the minimum requirement fixed by international regulators such as the Basel committee.

The majority of financial analysts indicated a significant positive relationship between capital adequacy and revenue of the banking sector (Sufian, 2012; Ben Ameer & Mhiri, 2013). They showed that the higher the capital adequacy ratio and financial liquidity level of the financial institution, the higher the level of profitability.

During the COVID-19 crisis, all IBs with high capital adequacy and structure ratios should have the ability to resist and mitigate the negative shocks. Thus, hypothesis H1 of this research paper is presented as follows:

H1: There is a positive relationship between capital adequacy and IBs' financial return during the COVID-19 crisis.

#### ***Liquidity Risk***

The liquidity risk of IBs is defined as the failure to face short-term debts. Several financial specialists, researchers and regulators recommend IBs to keep a minimum level of liquid assets to avoid insolvency and liquidity risks during unstable periods (Curak *et al.*, 2012; Adusei, 2015). The Basel III committee has recommended that banks manage liquidity needs and liquidity risk exposure.

During the COVID-19 crisis, IBs faced a slowdown in funding activities and excess cash withdrawals because many people became jobless and many companies stopped their business activities. Thus, they should keep a comfortable level of liquid assets to meet their financial and business obligations. However, the level of liquid assets should not exceed certain limits because it can lead to a decrease in banks' activities and thus a reduction in banks' profitability (Marijana *et al.*, 2012).

Alexiou and Sofoklis (2009) stated that a bank with an acceptable liquidity risk ratio can meet its short-term obligations and enhance its profitability. Petria *et al.* (2015) confirmed that a financial institution with a proper liquidity risk ratio will have the financial capacity to resist crises. Based on the reviewed literature, hypothesis H2 in this paper is defined as follows:

H2: There is a positive relationship between liquidity risk and IBs' financial return during the COVID-19 crisis.



### *Credit Risk*

Credit or financing risk in IBs refers to the loss probability of banks when their borrowers fail to meet their obligations and repay their loans. The ratio of non-performing loans (NPL) to total assets is employed as a variable to evaluate banks' credit risk. IBs that are exposed to an abnormal level of credit risk must increase their loan loss provisions.

After the appearance of the coronavirus, all banks across the globe were highly affected by the socio-economic impact of the long lockdown period. Several banks suffered from increasing NPL during the pandemic period because many firms failed to sustain (Korzeb & Niedziółka, 2020). In the case of IBs, Hasan (2020) reported an increase in credit risk level because many customers lost their jobs during the long period of social distancing. He argued that IBs were struggling with high NPL.

Several studies reported the negative impact of a high level of credit risk exposure on bank revenues. Athanasoglou *et al.* (2008) revealed that a high level of loss provisions is associated with a low level of profitability. Likewise, Dietrich and Wanzenried (2014) and Le and Ngo (2020) reported that high credit risk exposure leads to a fall in banks' return. Considering the empirical findings, hypothesis H3 is presented as follows:

H3: There is a negative relationship between credit risk and IBs' financial return during the COVID-19 crisis.

### *Managerial Efficiency*

Managerial efficiency is considered as the ability of the financial institution to control its total costs and revenues. It is defined as operational costs divided by bank income. The lower the total cost relative to bank revenue, the higher the bank profitability is. On the other hand, higher ratios indicate lower efficiency.

Many IBs around the world experienced a decrease in business activities and revenues with the spread of COVID-19. However, their operational costs were almost stable, thus leading banks into a highly risky situation. To be sustainable, IBs must implement a low-cost strategy. They have to minimise their operational costs to meet their obligations during extended lockdowns.

Several scholars like Akbas (2012), Petria *et al.* (2015), and Salike and Ao (2018) indicated a negative correlation between managerial efficiency and bank revenues assessed by both return on assets (ROA) and return on equity (ROE). They stated that managerial efficiency is a main determinant of profitability in banks during unstable periods because it measures the capacity of banks to monitor and minimise their operational costs. Taking the literature review into consideration, hypothesis H4 is proposed as follows:

H4: There is a negative relationship between managerial efficiency and IBs' financial return during the COVID-19 crisis.

### *Bank Size*

The size of the IB is considered (among) the internal determinants of revenue. A large bank can generate synergetic effects and economies of scale (Adusei, 2015). In addition, large banks have considerable numbers of ATMs and branches that can attract more customers and, therefore, increase profitability (Pervan *et al.*, 2010).

Despite the social distancing during the COVID-19 crisis, large banks succeeded in serving their customers remotely thanks to technology. Their large number of ATMs and branches also kept their customers well-served and satisfied during extended lockdowns. These arguments have been confirmed by Mirzaei *et al.* (2013), who stated that large commercial and conventional banks are able to control their risks during crises due to their diversified portfolios, technology and competitive advantage.

Many scholars reviewed the link between bank size and financial profitability in different European, Asian and African regions (Flamini *et al.*, 2009; Mirzaei *et al.* 2013; Bertay *et al.*, 2013; Petria *et al.*, 2015; Al-Harbi, 2019). They found a positive influence of large-sized banks on profitability during stable and unstable periods. They stated that large banks have efficient operational systems, risk management processes and financial structures.

Taking into consideration the literature review, hypothesis H5 is stated as follows:

H5: There is a positive relationship between size and IBs' financial return during the COVID-19 crisis.

### *Non-Traditional Islamic Activities*

The profitability in IBs has two different sources. The first income source is provided through traditional Islamic activities based on PLS contracts. The second income source is generated through non-traditional business activities like restricted *mudārabah* contracts (restricted investment accounts), guarantees and letters of credit (Ma'in *et al.*, 2015).

The non-traditional activities (shareholders' and depositors' investments) can be developed by IBs during the COVID-19 crisis to generate additional revenues and compensate for the drop in their revenues from traditional Islamic contracts.

Many studies confirmed the positive impact of off-balance sheet activities (non-traditional Islamic operations) on profitability during stable and unstable periods (Petria *et al.*, 2015; Saona, 2016). They stated that off-balance sheet assets generate additional revenues for the banking sector and enhance the overall return of banking firms.

Taking into consideration the literature review, hypothesis H6 is defined as follows:

H6: There is a positive relationship between non-traditional Islamic activities and IBs' financial return during the COVID-19 crisis.

### *External Determinants*

#### *Gross Domestic Product*

Growth Domestic Product (GDP) reflects the business cycle and economic growth. GDP is affected by numerous factors such as demand and supply. In the case of IBs, economic conditions and GDP can influence the level of loans, deposits and profitability. For example, higher economic growth can generate more loans and deposits, thus enhancing bank performance. On the other hand, higher economic growth can develop business activities and competition between banks and, therefore, lead to a drop in bank return.

During the development of COVID-19, all countries in the MENA region (such as the KSA, Kuwait, Morocco, Oman, Tunisia, and the UAE) experienced a decrease in GDP and business activities due to the long quarantine period. The level of bankruptcy and NPL increased, which led to a fall in bank returns. Several studies revealed this positive correlation between



bank financial performance and GDP (Saona, 2016; Mungly *et al.*, 2016; Yahya *et al.*, 2017). Therefore, hypothesis H7 is defined by the following:

H7: There is a positive relationship between GDP and IBs' financial return during the COVID-19 crisis.

### *Inflation*

Inflation has a direct influence on consumer behaviour and thus on bank activities. Higher inflation rates decrease the purchasing power of customers, and therefore, lead to lower bank loans and revenues. On the other hand, higher inflation rates can raise loan interest rates and thus lead to an increase in bank returns.

In the MENA region, it is not clear how the COVID-19 pandemic period has affected the inflation rate. Some countries such as the UAE and Oman have experienced an increase in the inflation rate whereas the inflation rate in some other countries such as the KSA and Kuwait fell. Consumer behaviour has also dramatically changed in the MENA region.

In this research, it is presumed that the development of inflation without an increase in wages—the situation that prevailed in MENA countries during the health crisis—can reduce all bank activities. The literature review shows different outcomes regarding the influence of the inflation rate on banks' return; however, the majority of recent empirical findings showed an inverse relationship between bank return and inflation rate (Abel & Le-Roux, 2016; Yao *et al.*, 2018; Al-Homaidi *et al.*, 2020). Thus, hypothesis H8 can be formulated as follows:

H8: There is a negative relationship between inflation and banks' financial return during the COVID-19 crisis.

### *Oil Price*

Several countries in the MENA region such as Bahrain, Oman, the UAE, Qatar, Kuwait, and the KSA are large oil producers and exporters. Their banking sector, economies and government expenditures rely mainly on oil production and exports.

The combination of coronavirus with lockdowns created an unexpected crisis for the oil industry. During 2020, crude oil prices decreased below USD20 on several occasions due to the imbalance between demand and supply. All oil producers in MENA countries encountered serious financial crisis. As a result, bank loans and profitability decreased because the majority of bank deposits in the MENA region come directly and indirectly from oil sales (Berument *et al.*, 2010).

Saif-Alyousfi *et al.* (2018) indicated that the return of banking firms in the MENA region is highly affected by the fluctuation of oil prices since it is considered the main source of economic development for many countries. Ayu-Effendi (2019) showed that oil revenues are highly correlated with bank reserves in oil-producing countries. Lower oil prices can decrease the GDP of oil-exporting and producing nations and thus lead to a decrease in the liquidity level of the banking sector. El-Chaarani (2019) also showed a relationship between oil index prices and bank return in several oil-producing countries such as Bahrain, the KSA and Oman. Poghosyan and Hesse (2009) and Imam and Kpodar (2010) further confirmed the existence of a positive correlation between oil prices and IBs' returns in the MENA region. They stated that

any rise in oil prices can enhance liquidity and deposits and thus lead to improved financial returns for IBs.

The final hypothesis of this research is thus presented as:

H9: There is a positive relationship between oil prices and banks' financial returns during the COVID-19 crisis.

## METHODOLOGY, SAMPLE AND DEFINITIONS OF VARIABLES

T-test and multiple regression models were employed in this research to examine and compare both external and internal determinants of IBs' profitability before and during the development of COVID-19 over the period 2018–2021. The data of the IBs in the MENA region were collected from two different sources: IBs' financial reports and the Orbis Bank database.

The population of this study includes all IBs from 20 countries located in the MENA region. To eliminate any bias, some countries such as Palestine, Djibouti, Lebanon, Syria, Yemen, Iraq, Iran, Libya and Algeria have been excluded from this study due to their economic, financial and political instability. Malta has also been excluded since it is considered a part of the EU (European Union) and its banking system is highly influenced and supported by the European Commission. From the main population, a number of banks have also been excluded due to missing financial data. In total, the number of IBs explored in this study is 45 from nine different countries. **Table 1** shows the research sample.

**Table 1: Research Sample in MENA Countries**

Country	Total number of banks	Percentage per country
Bahrain	11	24.44
Egypt	4	8.89
Kuwait	5	11.11
Morocco	2	4.44
Oman	4	8.89
Qatar	6	13.33
The KSA	4	8.89
The UAE	7	15.56
Tunisia	2	4.44
Total	45	100

Source: Author's own

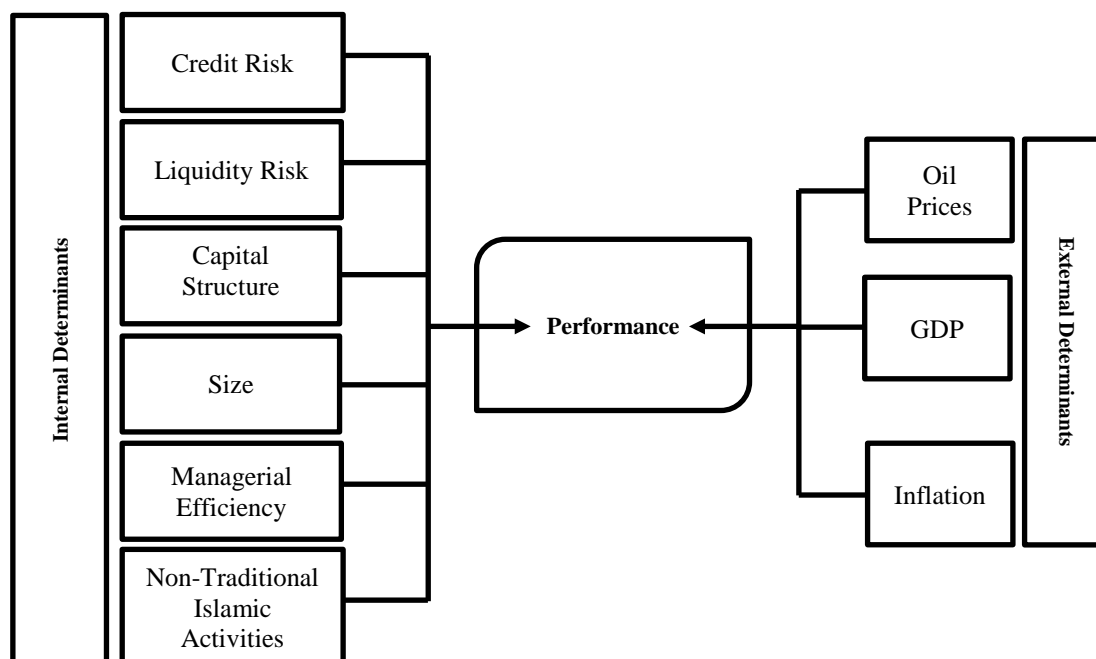
In this research, three categories of financial and economic variables are employed, as defined in **Table 2**.

**Table 2: Key Ratios**

Category	Ratio	Formula	Symbol
Internal determinants	Credit risk	$(\sum \text{Non performing loan}) / (\sum \text{loans})$	NPL
	Liquidity risk	$(\sum \text{loans}) / (\sum \text{deposits})$	LTD
	Size	<i>Natural logarithm of total assets</i>	SIZ
	Capital structure	$(\sum \text{equity}) / (\sum \text{assets})$	CAS
	Managerial efficiency	$(\sum \text{cost}) / (\sum \text{net income})$	MAE
	Non-traditional Islamic activities	$(\sum \text{non – traditional Islamic income}) / (\sum \text{average assets})$	DIV
External determinants	GDP	Gross domestic product	GDP
	Inflation	Inflation variation rate	INF
	Oil price	Annual variation of oil price	OIL
Performance (Dependent variables)	Return on assets	$(\sum \text{net income}) / (\sum \text{assets})$	ROA
	Return on equity	$(\sum \text{net income}) / (\sum \text{equity})$	ROE

Source: Author's own

The model of this research is presented in **Figure 1**.

**Figure 1: Research Model**

Source: Author's own

## EMPIRICAL FINDINGS

### Descriptive Analysis

With the large incidence of COVID-19 infections, all MENA countries faced a decrease in their macro indicators (**Table 3**) due to the interruption of supply chains, long lockdown periods, and decline of oil and tourism revenues. The average of GDP in MENA countries decreased from 0.6723 in 2019 to -2.9134 in 2020; whereas the inflation rate increased from 2.0194 per cent in 2019 to 9.5051 per cent in 2020. The average crude oil price also decreased from USD 64.3416 in 2019 to USD41.4754 in 2020. During 2021, the results show a recovery of oil values and GDP growth. On the other hand, the inflation rate increased to 10.0487 per cent during 2021 as international energy and food prices rose.

**Table 3: Average and Standard Deviation of External Determinants**

Variable	Average Mean 2018	SD 2018	Average Mean 2019	SD 2019	Average Mean 2020	SD 2020	Average Mean 2021	SD 2021
GDP	3.1398	2.4092	0.6723	1.8415	-2.9134	1.2555	3.2512	1.2019
Inflation	2.1796	3.5914	2.0194	2.5025	9.50514	6.3314	10.0487	6.9371
Oil prices	71.3474	3.5824	64.3416	2.6814	41.4754	15.0637	70.6875	16.484

Source: Author's own

IBs' profitability in the MENA region was negatively influenced by the appearance of COVID-19 (**Table 4**) and the drop of economic indicators. The average ROA of IBs decreased from 0.1845 in 2019 to -0.3521 in 2020 whereas the average ROE declined from 3.2740 in 2019 to 2.0465 in 2020. During the recovery from COVID-19 (2021), both ROA and ROE increased to 0.1123 and 2.7425, respectively. The vaccination campaigns in the MENA region saved citizens' lives and supported financial and economic recovery of all sectors, including IBs.

**Table 4: Average and Standard Deviation of Profitability**

Variable	Mean 2018	SD 2018	Mean 2019	SD 2019	Mean 2020	SD 2020	Mean 2021	SD 2021
Return on assets ratio (ROA)	0.2137	0.9412	0.1845	1.0193	-0.3521	1.3313	0.1123	1.0326
Return on equity ratio (ROE)	3.5266	2.1935	3.2740	2.4228	2.0465	1.4413	2.7425	1.2246

Source: Author's own

The COVID-19 triggered financial stress on IBs in the world, especially in MENA countries. On the one hand, the pandemic period amplified the financial risk of IBs. As shown in **Table 5**, the credit risk increased from 7.3781 in 2019 to 8.1901 in 2020 whereas liquidity risk increased from 77.1604 in 2019 to 78.5162 in 2020. On the other hand, many IBs in MENA countries suffered from a sharp drop in capital structure, managerial efficiency, and non-traditional Islamic activity ratios. First, the capital structure ratio decreased from 19.1895 in 2019 to 15.5822 in 2020. Second, the managerial efficiency ratio declined from 0.3223 in 2019 to 0.1097 in 2020. Finally, the non-traditional Islamic activities dropped from 0.0671 in 2019 to -0.0214 in 2020. However, the assets of IBs developed slightly by 0.452 between 2019 and 2020. The results also indicate

that all the financial indicators of IBs in the MENA region improved in 2021, but they were below the average of the pre-pandemic period (2018 and 2019).

**Table 5: Average and Standard Deviation of Internal Determinants**

Variable	Mean 2018	SD 2018	Mean 2019	SD 2019	Mean 2020	SD 2020	Mean 2021	SD 2021
Credit risk	6.3631	4.2918	7.3781	3.7278	8.1901	3.5314	7.4501	2.4115
Liquidity risk	73.4841	5.3937	77.1604	6.5025	78.5162	5.6033	77.8302	6.0918
Size	11.5831	3.5851	12.569	2.0933	13.021	3.2365	13.1521	4.0917
Capital structure	18.4742	2.0918	19.1895	2.6082	15.5822	2.0752	16.8921	2.2101
Managerial efficiency	0.3847	1.0294	0.3223	0.1210	0.1097	0.0183	0.2806	0.0119
Non-traditional Islamic activities	0.0761	0.6474	0.0671	0.5924	-0.0214	0.6615	0.0124	0.2351

Source: Author's own

The t-test results presented in **Table 6** show the comparison of financial indicators (means) in IBs between 2018 and 2021. The sample of banks was split into two. The first sample includes IBs over the period 2018–2019 (before the pandemic crisis). The second sample includes IBs over the period 2020–2021 (through the pandemic crisis).

The empirical findings show that the majority of means differences are significant except the capital structure ratio, bank size and non-traditional Islamic activities. Thus, the results confirm the negative influence of the last health crisis period on almost all indicators of IBs in the MENA region.

**Table 6: Comparison of IBs Before and During COVID-19 Crisis**

		Before the pandemic (2018–2019)		During the pandemic (2020–2021)		Mean difference	Significance
Financial variables	Sign	Average mean	Number	Average mean	Number		
Credit risk	NPL	6.8706	86	7.8201	61	-0.9495	(***)
Liquidity risk	LTD	75.32225	86	78.1732	61	-2.85095	(***)
Size	SIZ	12.07605	86	13.08655	61	-1.0105	(n.s)
Capital structure	CAS	18.83185	86	16.23715	61	2.5947	(n.s)
Managerial efficiency	MAE	0.3535	86	0.19515	61	0.15835	(***)
Non-traditional Islamic activities	DIV	0.0716	86	-0.0045	61	0.0761	(n.s)
Return on assets indicator	ROA	0.1991	86	-0.1199	61	0.3190	(***)
Return on equity indicator	ROE	3.4003	86	2.3945	61	1.0058	(**)

\*\*\* = 1% significance level; \*\* = 5% significance level; \* = 10% significance level; n.s. = insignificant

Source: Author's own

### Regression Analysis

The multivariate regression models are employed in this research to reveal the external and internal key success factors of IBs' profitability in MENA countries before and during the

COVID-19 crisis. Before running the regression models, the multicollinearity levels of independent variables were examined. Since the values of VIF (Variance Inflation Factor) are less than 10, the results do not reveal any collinearity problem between independent variables, and thus they can be implemented in the same regression model.

The multivariate regression models of this research that will be employed during two different years (2019 and 2020) are developed as follows:

$$\text{Return on Assets} = \beta_0 + \beta_1 \text{NPL} + \beta_2 \text{LTD} + \beta_3 \text{SIZ} + \beta_4 \text{CAS} + \beta_5 \text{MAE} + \beta_6 \text{DIV} + \beta_7 \text{GDP} + \beta_8 \text{INF} + \beta_9 \text{OIL} + \varepsilon \quad \dots (1)$$

$$\text{Return on Equity} = \beta_0 + \beta_1 \text{NPL} + \beta_2 \text{LTD} + \beta_3 \text{SIZ} + \beta_4 \text{CAS} + \beta_5 \text{MAE} + \beta_6 \text{DIV} + \beta_7 \text{GDP} + \beta_8 \text{INF} + \beta_9 \text{OIL} + \varepsilon \quad \dots (2)$$

The profitability (ROE and ROA) of IBs in MENA countries does not have the same determinant before and during the evolution of COVID-19. During the crisis period, the influence of several internal and external factors became significant whereas some others became insignificant. Thus, IBs must change their financial strategies in light of COVID-19.

The empirical findings in **Table 7** reveal that before the pandemic period (2018 and 2019), credit risk (NPL), managerial efficiency (MAE) and oil price (OIL) have a negative impact on IBs' return. The impact of size (SIZ) on IBs' return is positive and significant in the first two regression models. The results also indicate a positive influence of liquidity risk and bank size on IBs' profitability during 2018 and 2019.

On the other hand, the findings show that during the pandemic period (2020 and 2021), only credit risk (NPL), managerial efficiency (MAE) and oil price (OIL) have an influence on both ROE and ROA of IBs in MENA countries. The influence of credit risk (NPL) is negative and significant and the impact of both managerial efficiency (MAE) and oil price (OIL) is positive and significant. The other variables have no influence on the financial return of IBs.

**Table 7: Regression Results**

	Before the pandemic: 2018–2019				During the pandemic: 2020–2021			
	Return on Assets		Return on Equity		Return on Assets		Return on Equity	
	Coef. value	Significance	Coef. value	Significance	Coef. value	Significance	Coef. value	Significance
Constant value	1.2841	***	1.5621	***	1.7181	***	1.6716	***
NPL	-0.0313	**	-0.0402	**	-0.1041	**	-0.1334	***
LTD	0.1113	***	0.1255	***	0.1336	ns	0.1345	ns
SIZ	0.0135	*	0.0136	**	0.0151	ns	0.0133	ns
CAS	0.0765	ns	0.0824	ns	0.0932	ns	0.1024	ns
MAE	-0.1104	***	-0.1451	***	-0.2471	***	-0.2566	***
DIV	0.0352	ns	0.0372	ns	0.0325	ns	0.0453	ns
GDP	0.0531	ns	0.0437	ns	0.0363	ns	0.0425	ns
INF	-0.1412	ns	-0.1356	ns	-0.1626	ns	-0.1521	ns
OIL	-0.0351	***	-0.0501	***	-0.1315	***	-0.1242	**
R <sup>(2)</sup>	0.5433		0.5231		0.5211		0.4746	
Adjusted (R <sup>2</sup> )	0.4272		0.5018		0.4521		0.4003	
Fisher-stat	6.5272		6.5256		5.9371		5.9881	
N	86		86		61		61	

\*\*\* = 1% significance level; \*\* = 5% significance level; \* = 10% significance level; n.s = insignificant

Source: Author's own



## DISCUSSION

The level of NPL shows a negative influence on the return level of IBs in MENA countries before and during the development of COVID-19. The result also reveals that IBs are more sensitive to NPL during the pandemic period. The quick spread of the coronavirus in MENA countries has increased the credit risk level and therefore led to a reduction in the financial returns of IBs. These empirical findings are consistent with the outcomes of Hasan (2021), who showed that credit risk ratio has a negative influence on IB return during crises. Thus, hypothesis H3, suggesting that the presence of a negative relationship between IBs' financial return and credit risk during the coronavirus crisis, is supported.

The impact of liquidity risk on IBs' financial return is inconsistent. Before the development of coronavirus, the impact of loan-to-debt ratio (LTD) was positive whereas this impact becomes insignificant during the pandemic crisis. Accordingly, an adequate level of LTD ratio can contribute to the profitability of IBs during normal periods while in case of crisis and pandemic periods IBs must minimise their liquidity risk to enhance their profitability. Petria *et al.* (2015) also revealed that a financial institution with low liquidity risk will have more ability to resist during times of crises. Thus, the second hypothesis (H2), suggesting the existence of a positive association between liquidity risk level and IBs' financial return during the COVID-19 crisis, is not supported.

A large IB has a high capacity to generate profits during stable periods. However, the impact of IB size (SIZ) becomes insignificant during unstable periods. Both small and large banks faced the same difficulties during the pandemic period. These observed results confirmed the empirical findings of El-Chaarani *et al.* (2022), who showed that bank size does not impact profitability during the pandemic period. Therefore, hypothesis H5, suggesting that the presence of a positive relationship between the size of IBs and their financial return during the coronavirus crisis, is not supported.

The Islamic finance industry in MENA countries is highly influenced by the ratio of managerial efficiency. The impact of the MAE variable is negative and significant before and during the progress of coronavirus. With the quick spread of coronavirus infections in the MENA region, the impact of managerial efficiency became higher than during the pre-COVID period. This outcome indicates that it is very important to control and minimise IBs' costs, especially during the exceptional pandemic period. The results are in line with many scholars like Petria *et al.* (2015) and Salike and Ao (2018) who showed that the managerial efficiency ratio and the control of operational and financial costs are the success factors of bank return during unstable periods. Accordingly, hypothesis H4, suggesting that 'there is a negative influence of managerial efficiency and IBs' financial returns during the coronavirus pandemic period', is supported.

The capital structure and non-traditional Islamic activities have no influence on the profitability of IBs in MENA countries before and during the development of coronavirus. These results confirm those obtained by El-Chaarani *et al.* (2022) in GCC countries during the development of coronavirus in 2020. Thus, the first hypothesis, H1, suggesting that 'there is a positive relationship between capital adequacy and IBs' financial return during the coronavirus crisis', and the sixth hypothesis, H6, suggesting that 'there is a positive relationship between

non-traditional Islamic activities and IBs' financial return during the COVID-19 pandemic period', are not supported.

As for external determinants of IBs' return, the results of regression models in **Table 7** reveal that during the development of coronavirus only one factor has negatively affected ROE and ROA.

The IBs' profitability is highly influenced by the volatility of crude oil prices. This empirical output can be explained by the fact that the oil sector is considered a basic source of revenues and activities for several countries in the MENA region. During 2020 and 2021, the negative impact of the oil price variation was higher than its impact in the pre-pandemic period due to the drop in oil values and the long lockdown period. These results are consistent with the empirical findings of Saif-Alyousfi *et al.* (2018) and El-Chaarani (2019), who found a direct correlation between oil values and banks' return in several MENA countries like the KSA, Kuwait and the UAE. Thus, hypothesis H9, suggesting that 'there is a positive relationship between oil prices and bank financial return during the COVID-19 pandemic period', is supported.

On the other hand, the results do not indicate any substantial influence of GDP on the financial returns of IBs in MENA countries during the progress of coronavirus. These results match with those obtained by El-Chaarani *et al.* (2022) in GCC countries. Thus, hypothesis H7, suggesting that 'there is a positive correlation between GDP and IBs' financial return during the COVID-19 crisis', is not supported.

As for the inflation rate impact, **Table 3** indicates that the spread of COVID-19 infections in 2020 increased the inflation rate during 2020 and 2021, which is in line with the observed results of scholars such as Fakhrunnas *et al.* (2021). However, the results in **Table 7** reveal the absence of significant influence of the inflation rate on the financial return of IBs during the COVID-19 crisis. Thus, hypothesis H8 suggesting that 'there is a negative relationship between inflation and banks' financial return during the COVID-19 crisis' is not supported.

## CONCLUSION

This research sheds light on IBs' profitability (ROE & ROA) in the MENA countries before and during the crisis of the coronavirus pandemic period. The t-test statistical model results suggest that the financial indicators of IBs during the pre-pandemic period are better than after the development of COVID-19. Like other sectors, the IBs were affected by the development of COVID-19 in MENA countries.

The findings of regression models reveal that several external and internal factors significantly affected ROE and ROA of IBs in the MENA region. Before the appearance of coronavirus, liquidity risk, bank size, credit risk, managerial efficiency, and oil price shocks influenced IBs' profitability. During the pandemic period, credit risk, managerial efficiency and oil price shocks affected IBs profitability. The study also does not reveal any impact of GDP, inflation, non-traditional Islamic activities and capital structure on IBs' profitability.

## Theoretical Implications

This study delivers new contributions to the literature and financial theories that assess the key success factors of IBs. First, the findings of this research validate some previous results on IBs'

profitability. This study supports that the existence of unstable times has a negative impact on the financial structure and return of IBs. Second, this research conducts an in-depth analysis on the determinants of IBs' profitability. It reveals that the determinants of IBs' profitability could change during times of crises and thus lead IBs in the MENA region to review their financial, investment and operational strategies during crises. Third, this paper indicates that Islamic values such as PLS and the prohibition of interest are not enough to protect IBs from international and local crises. IBs must review their financial decisions, behaviours, strategies and investments to mitigate the impact of unstable periods.

### **Managerial and Policy Implications**

The results of this research also provide practical insights for Islamic bankers during crises and unstable periods. According to this study, IBs must manage and analyse their financial activities differently during crisis periods. Executives in IBs must reduce their lending portfolio to face the huge cash withdrawals and minimise the level of NPL. They must implement new strategies to reduce the overhead cost and increase the overall bank performance. It is also recommended for IBs in the MENA region to diversify their portfolios and reduce their high dependence on the oil sector. They can increase their investments in new technologies, R&D, and international activities to reduce risks.

On the other hand, regulatory authorities must review the impacts of coronavirus on IBs in the MENA countries. They must improve their supervision actions and support for the Islamic banking sector. They should update their regulations to protect the financial stability of IBs during unstable periods. During crises, regulatory authorities in MENA countries also need to motivate IBs to enhance their deposit insurance, develop their capital requirement, and avoid excessive lending and investment strategies.

### **Research Limitations and Future Research**

This research presents several limitations. First, this study is conducted during a very short period (two years before the development of the pandemic and two years during the spread of the pandemic). Second, the number of IBs considered in this research is relatively small. Third, this research does not consider the implication of COVID-19 on IBs in each country. Fourth, this study omits many other determinant factors of bank financial return such as ownership structure, level of legal protection in each country, and unemployment rate.

Therefore, it is suggested to conduct future research works that could include extended periods based on a larger sample of IBs. Also, future research can study the situation of the Islamic banking industry in each country among MENA countries. Finally, some other external and internal determinants of IBs' financial returns could be explored and covered in future research papers.

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