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ARTÍCULO

Non-Performing Financing Among Islamic Banks in Asia-Pacific Region

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Abstract: This paper is an attempt to investigate the effects of gross domestic product (GDP), outstanding credits (OC) and capital adequacy ratio (CAR) on non-performing financing (NPF) across all Islamic banks and financial institutions in seven selected countries in the Asia-Pacific region. Within the framework of Islamic bank operations and risk assessments, we put up this estimated model into tests in this empirical study. The investigation is carried out using yearly balanced panel data across the seven countries over the 8-year from 2013 to 2020. The static panel data estimation methods involving Fixed Effect and robust standard error are used, while non-performing financing is designated as our variable of interest. Consistent with earlier studies, the empirical results show that OC, CAR and GDP are relevant in explaining NPF among the Islamic banks in this Asia-Pacific region. Also, there is a negative significant relationship between GDP, CAR and NPF suggesting that an increase in GDP and CAR will reduce the percentage of NPF. Although OC is a significant variable, the strength of the relationship with NPF is seen as rather modest.

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1. Introduction

Non-performing financing (NPF) is the term used in Islamic banking that refers to a bank loan that has been defaulted on or is unlikely to be paid back in full by the borrower. In conventional banking, it is known as a non-performing loan (NPL). Non-performing loans are a key concern for the banking industry since they lower bank profitability and are sometimes seen as preventing banks from lending more to businesses and individuals which in turn will slow down economic growth (Kumar, Stauvermann, Patel, & Prasad, 2018). Several financial, and macroeconomic factors affect NPF in financial institutions. The current study examines two financial factors like capital adequacy ratio (CAR) and outstanding credit (OC) and one macroeconomic factor GDP to determine the NPF in banks. Outstanding credit (the loans whose actual amount and interest thereon is due on the part of borrowers) increases the NPF in the banks while the increase in CAR (the ratio which shows how much capital is available to mitigate the risks) and GDP (the value of total products and services produced in the year) reduces NPF exposures in the financial institutions.

It was only in the early 1960s that the world had a chance to witness the first Islamic financial institutions in Egypt and Malaysia. Set up in 1963, both Mit-Ghamr Savings Bank and Malaysian Muslim Pilgrims Savings Corporation are referred to as the early examples of Islamic financial institutions in the modern world (Durrani, Rosmin, & Volz, 2020). The financing activities of Mit-Ghamr were based on profit-sharing models for businesses, while the Muslim Pilgrims Savings Corporation focuses on assisting their depositors in saving for the Hajj (Pilgrimage) to Mecca and Medina in Saudi Arabia. Unlike the Muslim Pilgrims Savings Corporation, the Mit-Ghamr Savings Bank ceased operation in 1967 due to some political reasons but during the years of operations, the bank managed its portfolios prudently with almost zero default ratio (Yang, Gan, & Li, 2019). It is important to note that majority of Islamic financing activities are channelled into commercial financing as businesses work on achieving their long-term goal of financial growth and reducing the company's weighted average cost of capital (Nather, Mandy, Ning, & Kaiying, 2018).

In most countries with the largest Muslim populations, Islamic finance is almost impossible to downplay because of its enormous size. As a result, Shariah-based financing such as Sukuk (Islamic bond) has become one of the most preferred products in the global financial markets (Phan, Pham, Nguyen, & Nguyen, 2021). Being a Muslim-majority country has led to the formation of two types of financial systems in Malaysia - the conventional financial system and the Shariah-based financial system (Naeem, 2020). Due to this dual financial system, Malaysia is one of the top Islamic financial hubs in the world. As such, all Shariah-compliant firms inclusive of Islamic financial institutions are strictly required to comply with all the operational standards set in accordance with Shariah-based principles (Musa, Abd Sukor, Ismail, & Elias, 2020). As shown in Table 1, the percentage of NPFs among the Islamic banks are very low in Malaysia and Oman.

Table 1: Non-Performing Financing (NPF %)

Year	Brunei	Indonesia	Malaysia	Oman	UAE	Pakistan	Turkey
2013	6.00	13.70	1.40	0.06	6.60	7.20	8.20
2014	6.60	23.50	1.30	0.09	7.50	6.70	12.00
2015	4.90	25.10	1.30	0.13	6.60	7.10	12.60
2016	5.50	21.90	1.30	0.19	6.40	6.20	12.00
2017	5.40	17.70	1.40	0.47	5.30	5.10	7.90
2018	5.80	12.70	1.40	0.82	4.80	4.00	6.70
2019	3.90	11.50	1.50	1.12	5.40	3.60	8.20
2020	4.01	9.79	1.36	2.00	6.34	4.40	3.77
Note: 1. The European standard is 6%							

There is no doubt that the growth of Islamic financing is attributed to the robust economic growth in these seven countries over the past eight years. Table 2 presents the nominal GDP among the seven countries and Indonesia is the biggest, followed by UAE. Indonesia's GDP has been growing drastically in the past 8 years from USD561 billion in 2013 to USD780 billion in 2020. Businesses particularly small-medium enterprises generally require additional funds for future growth and banks are the typical source of credit in any financial system (Abu-Dawleh, Lybaert, Steijvers, & Jans, 2021). However, in the case of Shariah-based firms, taking debt from commercial banks or other financial institutions to meet their financial requirements is not an ideal option because of the interest factor (riba) which is strictly prohibited in Islam (Suzuki, Uddin, & Sigit, 2019). In the case of Shariah-compliant public listed companies, the Shariah advisory committee imposes a very strict restriction for them to maintain a debt-equity ratio not more than 33 per cent limit (Noordin & Kassim, 2019). Continuous economic growth coupled with the need for business expansions has contributed to the drastic increase in demand for Islamic financing in these seven countries. Therefore, an investigation to look into the theoretical relationship between NPF and its key determinants (CAR, OC and GDP) is deemed necessary. This paper seeks to provide new insights by investigating the true determinants of NPF within the framework of Islamic bank operations and risk assessment set by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI). This study involves selecting seven Muslim-majority countries in the Asia-Pacific region, namely Indonesia, Malaysia, Brunei, United Arab Emirates, Oman, Pakistan and Turkey. Due to their distinctive Islamic finance systems, we hope to discover some country-specific effects from this empirical research. In Muslim majority countries in the Asia-Pacific region, namely Indonesia, Malaysia, Brunei, United Arab Emirates, Oman, Pakistan and Turkey, banks play a specific role in the economies (Hanif, 2020). Other sectors of the economy depend on the performance of banks. In these Muslim majority countries, Like a traditional bank, the main functions of Islamic banks include receipts of deposits, savings, and grants of finance or loans. But, the banks' exposure to the non-performing loans, restricts the banks' performance and thus, limits the economic growth rate (Chow, Muhammad, Noordin, & Cheng, 2018). The present study was conducted to remove this issue. The objective of this study is to explore the influences of outstanding credit, capital adequacy ratio, and GDP on non-performing financing. This study is a great contribution to the literature. 1) In the previous literature, the variables like outstanding credit, capital adequacy ratio, and GDP have been examined while examining non-performing financing. But single research has been conducted about only one of these variables at one time. The current study is about the relationship among outstanding

credit, capital adequacy ratio, and GDP and non-performing financing. 2) Mostly, the authors have discussed the GDP itself as a determinant of non-performing financing. The use of GDP for the measurement of economic growth is the main factor of non-performing financing. 3) Before this study, research has only been conducted in one or two countries for the analysis of impacts of outstanding credit, capital adequacy ratio, and GDP on non-performing financing. This study, for the first time, selects Muslim majority countries in the Asia-Pacific region, namely Indonesia, Malaysia, Brunei, United Arab Emirates, Oman, Pakistan and Turkey for the analysis of outstanding credit, capital adequacy ratio, and GDP on the non-performing financing is a great addition to the literature.

Table 2: Nominal Gross Domestic Product (GDP in USD billion)

Year	Brunei	Indonesia	Malaysia	Oman	UAE	Pakistan	Turkey
2013	13.878	560.584	249.955	81.000	340.360	58.867	196.743
2014	13.530	588.651	264.969	74.500	355.331	61.253	206.908
2015	13.475	617.355	278.237	43.900	373.328	63.739	219.501
2016	13.143	648.427	290.617	28.700	384.484	66.647	226.489
2017	13.317	681.285	307.304	20.100	386.371	70.126	243.410
2018	13.324	716.517	321.875	14.500	393.042	74.002	250.291
2019	13.566	752.607	336.360	14.600	399.173	76.440	250.914
2020	13.246	780.165	350.202	13.300	413.856	79.382	266.777

The paper is comprised of five parts: In the second part, the literary arguments about the influences of outstanding credit, capital adequacy ratio, and GDP on the non-performing financing are considered. In the third part, the data collection process and analytical method adopted was described and the results of the study are placed. Through proper discussions of the study, results are aligned with the previous studies' results. The paper ends with the conclusions and limitations of the study.

2. Literature Review

The 2019 pandemic has been running for almost two years, causing countries around the world to experience a prolonged economic crisis until now. Monetary and fiscal policies are the economic tools for governments around the world to deploy in times of crisis. Monetary and fiscal policies have a direct impact on the credit risk faced by the banking industry (Koju, Koju, & Wang, 2019). To prevent the economic slowdown due to the crisis, almost all countries affected by the crisis have carried out counter-cyclical policies in the form of fiscal stimulus and monetary easing. Fiscal stimuli include increased government spending and tax cuts. Monetary easing is not only limited to lowering interest rates but also quantitative easing in the form of purchasing securities to increase economic liquidity. Keynes' view is that fiscal stimulus and monetary easing can prevent a decline in a country's gross domestic product (GDP) (Hodula & Melecký, 2020). An increase in aggregate demand stemming from fiscal stimulus and monetary easing in a situation of high prices and a lack of employment will encourage an increase in real output in the short term. The monetary easing policy led to a downward trend in interest rates, reduced financing costs and increased demand for credit, thereby encouraging increased consumption and investment activities, and ultimately supporting aggregate domestic demand (Kirchner & Rieth, 2021). The economy gets better when the fiscal and monetary authorities coordinate policies. The crisis shows that the policy targets are output stability and inflation, output composition, asset price behaviour and leverage. This target can be achieved through a combination of traditional monetary policy instruments and fiscal policy. Policy coordination can reduce the risk of conflict and increase the effectiveness of achieving goals (Karadima & Louri, 2021).

The monetary easing policy can increase liquidity in the money market, thereby increasing public confidence in the banking system. This can increase the bank's liquidity and reduce its settlement risk, which in turn encourages the businesses to move the economy. Governments in various countries have expressed commitments to increase deposit guarantees and other guarantees for various loans and capital assistance for banks experiencing liquidity difficulties and credit crunch (Adrian, Estrella, & Shin, 2019). Many studies show the effect of monetary policy on bank credit risk. A recent study in the U.S shows that monetary policy causes a rapid decline in leverage and reduces bank credit risk and has a positive impact on increasing small and medium business credit and global banking flows (Lee & Bowdler, 2020). However, the impact of monetary policy on banks' business risks varies in every country. In another study by Dong and Xiao (2019) in China, they assert that monetary policy can increase outstanding credit, reduce pressure on customers and stimulate the overall economy that leading to financial stability. During a financial crisis, monetary policy can help the bank reduce its credit risk, adjust the value of its assets and liabilities, change financing behaviour and subsequently deliver a positive impact on the economic activities. A bank's performance is very influenced by interest rates as a result of changes in monetary policy or any structural change in the financial intermediation process. Furthermore, monetary policy expansion can support the collateral value, thereby reducing the bank's credit exposure (Fianto, Maulida, & Laila, 2019).

In particular, credit risk in Islamic banks is in the form of financing risk, namely non-performing financing (NPF) which is influenced by the client's age, gender, occupation and type of contract (Muhammad, Suluki, & Nugraheni, 2020). Warninda, Ekaputra, and Rokhim (2019) argue that Mudarabah and Musharakah financing schemes do not affect Islamic bank financing risk and their study involves a large sample of 63 Islamic banks in the Middle East, South Asia and Southeast Asia. During the current pandemic crisis, a conventional bank credit risk is influenced by the macroeconomic environments, institutional, corporate, and banking sector conditions. A number of studies point out that bank credit risk is also influenced by a country's gross domestic product. In terms of bank operations, credit risk is strongly influenced by bank-specific factors, namely the capital adequacy ratio and outstanding credit (Qudah, 2021).

NPF is affected by capital adequacy ratio (CAR), therefore a high NPF will cause the intermediation function to run inefficiently. Due to this, a central bank must step in to ensure that the NPF ratio is kept at an acceptable level at all times. In another study, it shows that as a bank's capital increases, its credit risk will increase in tandem. The extent to which credit risk increases as a result of increased capital will depend upon the level of competition faced by the bank (Madugu, Ibrahim, & Amoah, 2020). At the time of crisis, the U.S government is seen inclined to carry out financial stabilization by increasing bank capital. Such a policy has an impact on increasing credit risk for large banks but decreasing credit risk for small banks. It is argued that increasing capital in large banks without additional financing would only lead to moral hazard (Rehman,

Muhammad, Sarwar, & Raz, 2019). Similar research in Nepal interestingly shows an opposite result. The study reveals that CAR has a negative correlation with credit risk, thus effective financial policies and efficient management are necessary for financial system stability (Singh, Basuki, & Setiawan, 2021). A number of studies on CAR were performed in Barbados and India. Looking at the overall results, they show that credit risk is influenced by bank-specific factors. In another research in Nigeria, the finding is rather shocked as CAR does not influence credit risk at all (Oyewumi, Ogunmeru, & Oboh, 2018). It is important to note that there is a negative relationship between CAR and bank credit risk in the European banking system over the post-crisis period (Fijałkowska, Zyznarska-Dworczak, & Garsztka, 2018). In a literary article, Nugroho, Arif, and Halik (2021) examine the relationship between capital adequacy ratio (CAR), loan-loss provision, the third-party fund (TPF), and Non-Performing Loans (NPLs). The sample of the research includes government-owned banks like Bank Mandiri, Bank Rakyat Indonesia, Bank Negara Indonesia, and Bank Tabungan Negara period over the period of 2011-2018. Time series data acquired quarterly-based financial statements published by the banks' respective online websites and SPSS V.21 and MS Excel. The study concluded that CAR has a negative and significant relationship with NPLs or NPF as the rise in the capital reserver out of the profits, strengthens the risks management to minimize the NPLs or NPF exposures and the loss on exposures.

Outstanding credit (OC) is a measurement of Islamic banks outstanding financing across its financing products. The common feature of most Islamic banks is their tendency to offer business financing to small and medium-sized businesses as this market segment is lacking access to more credible capital markets. To minimize potential moral hazards and maintain prudent business practices, Islamic banks need to improve governance and observe compliances. The main advantage of being a large bank is the ability to absorb credit and liquidity risks efficiently as compared to smaller banks (Kalifa & Bektaş, 2018). A literary workout of Boumparis, Milas, and Panagiotidis (2019), measures the non-performing loans with credit policies adopted by banks. This study examines impacts of credit policies along with financial/macroeconomic factors. Based on this study, OC has a positive relationship with non-performing loans (financing). When banks follow the credit policy that they allow the grant of loans in large amounts at a time, they have to face the risks which carry great loss in the form of non-performing loans. Similarly, the size of non-performing financing (NPF) has a significant role in the sustainability of the country's banking sector. The determinants influencing the NPF has significant information for banks. For this, Khan, Siddique, and Sarwar (2020) examines the determinants of NPF in banks. The commercial banks listed on the Pakistan Stock Exchange over the time from 2005 to 2017 were the sample of the research. The determinants of NPF under consideration are outstanding loans, profitability, capital adequacy, operating efficiency, and income diversification. The results were attained through regression modelling with random and fixed effects through STATA software. The results indicated that the commercial banks where the deposits are used in such a way as a major portion of deposits are set aside for granting loans, and a small portion is kept for investment, and reserves, the NPF exposures are more likely to occur. A study by DAO and NGUYEN (2020) finds that financing growth is likely to increase bank credit risk. In the case of Vietnam, rapid growth in financing has detrimentally affected its banking system. Several studies have also found that the relationship between financing growth and credit risk is negative. In other words, an increase in financing can potentially reduce credit risk to a certain level. Exceeding this limit, however, will trigger an increase in the credit risk. Customer segmentation is another strategy that a bank can adopt to mitigate credit risk effectively. For instance, consumer credit is associated with higher credit risk relative to institutional borrowings (HA, 2019). It is also interesting to point out how small-medium enterprises (SME) financing could support banking system stability in some developing countries.

The influence of Gross Domestic Product (GDP) on financing risk has been widely discussed and debated. Many findings from earlier studies on the banking systems around the world support the notion that an increase in GDP has a direct effect on reducing credit risk for conventional banks. GDP is a very important macroeconomic variable as any growth in GDP indicates improved borrowers' ability to service their loans (Gulati, Goswami, & Kumar, 2019). As mentioned earlier, the key determinants of NPF are bank-specific factors and macroeconomic factors. The effect of GDP and other macroeconomic variables on NPF become more intricate for countries with unstable currencies. GDP growth is often associated with having a negative correlation with credit risk. As such, an economic slowdown will spark an increase in credit risk and unfavourable conditions in the markets (Rizvi, Kashiramka, & Singh, 2018). Inekwe, Jin, and Valenzuela (2018) report growth in GDP could also lead to an increase in bank credit risk as the banking industry is very vulnerable to changes in macroeconomic environments. As per Central Bank regulations, the NPF is about 5% only in Indonesia. but if it exceeds banks have to face difficulties and it potentially endangers business continuity. A study was conducted by Kartikasary, Marsintauli, Serlawati, and Laurens (2020), to investigate the factors affecting non-performing loans in banks listed on the Indonesian Stock Exchange. To determine NPF, the study examines the microeconomic factors like CAP, LTD, ROA, and ROE, and macroeconomic factors like DEBT, FISCAL, GDP, INFL, UNEMP. For analysis, regression methods are used and data acquired from the banking sector of Indonesia for 2014-2017, and macroeconomic data from the economy of Indonesia in that year. The findings prove that when the country's GDP growth rate is high, the banks along with other economic sectors show good performance and are confronted with minimum NPF.

3. Data and Methodology

This study involves a total of seven countries in the Asia-Pacific region across all segments in Islamic banking services (commercial and consumer banking) over the 8 years from 2013 to 2020. The yearly secondary data are extracted from the International Monetary Fund database and divided into South-East Asia and Central Asia regions. Indonesia, Malaysia and Brunei are grouped into the South-East Asia region, while Pakistan, Turkey, United Arab Emirates and Oman are categorized under the Central Asia region. The research model is estimated using static panel data analysis (SPDA) involving both fixed and random effect models. Empirically, our model is expressed as follows:

$$NPF_{it} = \alpha_0 + \beta_1 OC_{it} + \beta_2 CAR_{it} + \beta_3 GDP_{it} + e_{it} \quad \textbf{(1)}$$

Where;

NPF	=	Non-performing finance
i	=	country
t	=	Time Period
OC	=	Outstanding Credit
CAR	=	Capital adequacy Ratio
GDP	=	Foreign Direct Investment

where α and ß are the coefficients, i and t are the respective individual country and time-specific effects and e_{it} is the error

term of our model which is assumed to be independent, normally distributed with zero mean and constant variance. NPF is our variable of interest representing the non-performing financing among the Islamic banks. CAR is the Islamic bank's capital adequacy ratio, an important measure of the bank's solvency. OC denotes the Islamic banks' outstanding credits or their current advances in the balance sheets. The last predictor in our model is GDP, a proxy for economic growth. In selecting the credible model between fixed effect and random effect models, one must be clear with the objective of the research and problems associated with the homogeneity of the predictors or explanatory variables.

In addition, the current article examines the descriptive statistics that exposed the characteristics of the variables such as minimum and maximum values along with standard deviation and mean values. Moreover, the study also checks the correlation matrix to explore the nexus among the variables. Additionally, the article also used the variance inflation factor (VIF) to check the multicollinearity. The estimations are given below:

$R^2_Y \Longrightarrow Y_{it} = \alpha_0 + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + e_{it}$ **(2)**

$j = R^2_Y, R^2_{X1}, R^2_{X2,} R^2_{X3,} R^2_{X4,} R^2_{X5}$ **(3)**

$Tolrance = 1 - R^2_j \; VIF = \frac{1}{Tolerance}$ **(4)**

The Hausman test has been run to check the suitable model and the estimation equation is mentioned below:

$H = (b_1 - b_0)\,(Var(b_0) - Var(b_1))\,(b_1 - b_0)$ **(5)**

Equation (5) shows b_0 that indicated the "null hypotheses" about the random effect model (REM) is suitable. In contrast, b_1 indicated the "alternative hypotheses" about FEM is suitable. The results exposed FEM is suitable and FEM controls all "time-invariant" omitted constructs. FEM equation is given as below:

$Y_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + u_{it}$ **(6)**

In equation (6), subscript (i) indicated the "individual country" that makes different countries according to their associated characteristics. The FEM equation with variables used in the study is given as under:

$NPF_{it} = \beta_{1i} + \beta_2 OC_{it} + \beta_3 CAR_{it} + \beta_4 GDP_{it} + u_{it}$ ***(7)***

Both fixed effect and random effect models assume that individual countries would have their intercepts while restricting the slope to be homogeneous. In particular, the fixed-effect model assumes that individual country effect or country-specific effect (η_i) is part of constant (α), while the random effect model assumes that this country-specific effect (η_i) is part of the error term (Bakri et al., 2018). The article proceeds with the Hausman test to choose between fixed effect and random effect models. The null hypothesis of this test is to choose a random effect model over a fixed effect. If this null hypothesis is rejected, then the fixed effect model is considered appropriate.

The article has also executed the robust standard error because it has the ability to adjust "model's heterogeneity issues" that generally exist. In addition, it also controls the issues of "heteroscedasticity and auto-correlation". The estimation equation is highlighted below:

$NPF_{it} = \beta_1 OC_{it} + \beta_2 CAR_{it} + \beta_3 GDP_{it} + \varepsilon_{it}$ **(8)**

4. Empirical Findings

The balanced panel data are extracted into the IMF database and analyzed in SAS programs. To begin with, the descriptive statistics of the four variables across the seven countries over the 8 years are presented in Table 3. Table 3 shows that the mean OC is around USD25 billion, while its median stands at USD10 billion. The maximum value of OC is recorded at approximately USD138 billion. It is quite interesting to observe the profile of our variable of interest. The mean NPF settles at a reasonably low percentage of 6.40% and its median is even lower at 5.45%. Meanwhile, the mean value of CAR is registered at approximately 20% and this is considered plausible since the minimum ratio under Basel II and Basel III is just 8% and 10.50% respectively. With respect to the value of GDP, the mean is about USD239 billion coupled with its maximum value of around USD780 billion. It is evident that Indonesia's GDP is the biggest of all seven countries.

Table 3: Descriptive statistics of the four variables

Variable	Mean	Maximum	Minimum	Std Dev	Median
OC (USD mill)	24722.64	137697.42	14.49	35594.34	10064.67
CAR (%)	19.58	81.00	10.10	12.25	16.80
NPF (%)	6.40	25.10	0.06	5.68	5.45
GDP (USD bill)	239.23	780.17	9.92	224.81	234.95

It is therefore intriguing to find out the degree of association between our variable of interest and its determinants as presented in Table 4 below. Table 4 describes the correlation matrix of all the four variables used in our model. Specifically, the value of the correlation coefficient ranges between -0.28 and 0.63. The highest value of correlation is found between NPF and GDP at 0.63. It is worthy to note that their degree of association is significant at the 1% level. This may imply that GDP could be one of the factors or determinants that might influence Islamic banks' NPF. We also notice a negative significant correlation involving NPF and OC at a 5% level. Similarly, the pair of NPF and CAR also registers negative correlation and significant at 5% level. Based upon these preliminary findings, our selected predictors are credible enough to influence our variable of interest. Next, we will proceed with static panel data analysis.

Table 4: Correlation matrix of the four variables

Variable	OC	CAR	NPF	GDP
OC	1	-0.1916	-0.2810	0.3127
(p-value)		(0.1571)	(0.0359)	(0.0189)
CAR	-0.1916	1	-0.2787	-0.2486
(p-value)	(0.1571)		(0.0375)	(0.0647)
NPF	-0.2810**	-0.2787**	1	0.6349***
(p-value)	(0.0359)	(0.0375)		(<.0001)
GDP	0.31279	-0.2486	0.63498	1
(p-value)	(0.0189)	(0.0647)	(<.0001)	

***significant at 1% level & ** significant at 5% level

The VIF results indicated that the values of VIF are lower than five that is the indication of no multicollinearity in the predictors. Table 5 shows the findings of the VIF given below: The study results related to the Hausman test exposed that the probability value is lower than 0.50 that is the indication of FEM is suitable. Table 6 shows the results of the Hausman test given below:

Table 5: Variance inflation factor

	VIF	1/VIF
OC	3.291	0.304
CAR	2.032	0.492
GDP	2.892	0.346
Mean VIF	2.738	.

Table 6: Hausman test

	Coef.
Chi-square test value	3.982
P-value	0.008

The statistical results are presented in Table 7 given below. From the p-value, the test is found to be statistically significant at a 1% level and this implies that the fixed effect model is favoured. Based upon the robust standard error and fixed-effect model, the study reveals a significant negative relationship between GDP, CAR and NPF and a positive association between OC and NPF.

Table 7: Panel Data Estimation Results

Variable	Robust Standard Error	Fixed Effect
CAR	-0.05756	-0.04051
	[-1.64]	-1.26
	(0.1069)	0.2148
OC	0.00003	0.000081**
	[0.95]	[2.38]
	(0.3474)	(0.0222)
GDP	-0.005988	-0.04201***
	[-1.00}	[-3.4]
	(0.3241)	(0.0016)
R-squared	0.0758	0.9147

***significant at 1% and **significant at 5%
Figure in [ ] is t-statistics
Figure in ( ) is p-value

5. Discussions

The study results have indicated that CAR has a negative association with NPF. These results are in line with the previous study of Rachman, Kadarusman, Anggriono, and Setiadi (2018), which indicates that CAR highlights the risks bearing capacity of the companies as it shows how the amount of capital, the company has preserved to compensate the losses as a result of the exposures of risks. The study concluded that the increase in the CAR enhances the capacity of companies to reduce the non-performing loans which are contingent losses for the company. These results are supported by the previous study of Yurttadur, Celiktas, and Celiktas (2019), which suggests that when a financial institution maintains high CAR, the can reduce the non-performing financing. The availability of higher equity enables the banks to recover the maximum amount of non-performing finance with suitable initiatives and reduce the impact of failure on the recovery of loans granted. These results are also supported by the literary article Kartikasary et al. (2020), which examines the role of CAR in NPF. The study implies that CAR determines the link between the capital of financial institutions and risk-weighted assets. With the increase in the CAR, the banks have faced minimum loss or damages on the financial crises like non-performing financing. The literary workout of Jayanto (2020), also supports these results, by analyzing the impacts of CAR on NPF in the same manner. According to the results of this study, in financial institutions like banks where granting loans is a regular activity, the loss on the loans is likely to occur in case the borrowers become insolvent or fail to repay the amount of loan in time. If the banks set aside a suitable number of profits for preserving the company's position, it is likely to overcome the chances of NPF.

The study results have indicated that OC has a positive association with NPF. These results are in line with the previous study of Uddin, Chi, Al Janabi, and Habib (2020), which examines the impacts of loan policy and OC on NPF. This study implies that the amounts of loans outstanding, and different types are connected with credit risks. The larger the amount of money lent and the larger the period allowed for the repayment of loans are, there are more risks to failing to re-attain the money, allowed as a loan. These results also agree with the past study of Sharifi, Haldar, and Rao (2019), which focuses on the proper management of outstanding loans to be away from NPF. This study highlights that the banks which have the policy to grant a large number of loans even to an individual or a single party, have to face large credit risks as if a single debtor fails to repay the money even up to 90 days, the loans become non-performing. These results are also supported by the past study of Boussemart, Leleu, Shen, Vardanyan, and Zhu (2019), which states that the banks need to formulate suitable financing

policies in which lower amount money allowed to users as outstanding loans in the form of credit cards, personal credit, student loans, car loans, and other types of domestic or business loans and more amount of money is used to make an investment, the exposures of NPF are more frequent. These results are supported by the study of Ekinci and Poyraz (2019). It has been examined that the banks which are found to have granted large amounts of loans in different types have been exposed to high NPF.

The study results have indicated that GDP has a negative association with NPF. These results are in line with the previous study of LE and DIEP (2020). This study analyzes the impact of GDP on NPF. The repayment of the loans is dependent on the nature of loans granted, and the financial conditions of the borrowers. In the countries which successfully achieve a high rate of GDP, the banks have less amount of NPF as in these countries the borrowers usually have a strong financial position and have the capacity to pay back the loans at the right time. These results are also in line with the previous study of Ferhi (2018). According to the results of this study, when there is consistency in the business activities like the production processes, rendering of services, and technological innovations, the financial strength of people and firms improves and results in the reduction of NPF. These results are also in line with the literary article of Boateng, Liu, and Brahma (2019), which shows that when the economic activities are at peak, the businesses require large amounts of money to perform their functions, the consistent needs for loans motivate the businesses to be regular in paying the loan instalments. Hence, the increase in GDP reduces the NPF. The study results are in line with the past study of Hassan, Khan, and Paltrinieri (2019), which reveals that the countries which have high GDP, banks have a strong position and high performance. They have lower risks of NPF exposures as they can properly manage the issuance and recovery of loans.

6. Theoretical and Empirical Implications

The current study has carried many theoretical implications. It makes a lot of contributions to the literature on finance. It throws ample light on the influences of OC, CAR, and GDP on the NPF. In previous studies, authors have examined the role of OC, CAR, and GDP in reducing the NPF. This study is an initiative to present simultaneous research on the influences of OC, CAR, and GDP on the NPF. Moreover, the context of Muslim majority countries in the Asia-Pacific region, namely Indonesia, Malaysia, Brunei, United Arab Emirates, Oman, Pakistan and Turkey for the analysis of OC, CAR, GDP, and NPF adds to the literature. This study is substantiated guidelines for the government and financial institutions in the Muslim developing countries like Muslim majority countries in the Asia-Pacific region, namely Indonesia, Malaysia, Brunei, United Arab Emirates, Oman, Pakistan and Turkey and other countries in general. There are three important policy implications that can be derived from this study. First, governments must exercise proper checks and balances on credit creation in order to promote bank stability in their countries. Secondly, governments have no choice but to find ways to sustain economic growth because bank stability truly relies on wealth creation in the long run. Thirdly, the financial management in financial institutions like banks can follow this study as a guideline while forming their policies to overcome NPF. This study guides that NPF can be minimized with high CAR, lower OC, and a high rate of GDP.

7. Conclusion and Limitations

The study is pursued with the objective to examine the effects of GDP, outstanding credits and capital adequacy ratio on non-performing financing across all Islamic in seven selected countries in the Muslim majority countries in the Asia-Pacific region, namely Indonesia, Malaysia, Brunei, United Arab Emirates, Oman, Pakistan and Turkey. Within the framework of Islamic bank operations and risk assessments, we put up this estimated model into tests. The investigation is carried out using yearly balanced panel data across the selected seven countries over the 8-year period from 2013 to 2020. Static panel data estimation methods involving Pooled OLS, Fixed Effect and Random Effect models are used, while non-performing financing is designated as the dependent variable. The empirical results show that OC and GDP are relevant in explaining NPF among the Islamic banks in those countries within the Asia-Pacific region. This showed that the increase in the outstanding credits issued by the banks increases the default or failures of the borrowers to repay the instalments including the real amount of the loan and the interest on it over 90 days. Also, there is a negative significant relationship between GDP and NPF. The results showed that the increase in the GDP reduces the NPF as the increase in the living standard, and financial strength of the growing businesses reduces the frequency of NPF in the banks. Although OC is a significant variable, the strength of the relationship with NPF is seen as rather modest. The study concluded that CAR is negatively linked with the NPF. The increase in the preserved capital increases the banks' capacity to manage credit risks and reduces the damages of NPF exposures.

There are several limitations associated with this study. Across the world, a large number of countries have a Muslim majority and Islamic banking but the focus of this study is only on Muslim majority countries in the Asia-Pacific region, namely Indonesia, Malaysia, Brunei, United Arab Emirates, Oman, Pakistan and Turkey. This restricts the generalizability of the study and it is hoped that future researchers would consider increasing the number of countries in the data set. A larger data set with more variability is ideal as it increases the statistical reliability of the model. Another limitation is that the number of predictors is seen as rather small as this study focuses only on CAR, OC, and GDP and its impact on NPF. Incorporating two or three additional relevant explanatory variables would improve the predictive power of the estimated model.

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