

Research Article

# Banking Performance During the Global Financial Crisis: Empirical Evidence from Bangladesh

Mosa. Layla Arzuman Banu , Anima Karmakar , Kaniz Habiba Afrin ,  
Tamal Chakroborty\* , Tasnia Husne Afrin 

Department of Business Administration, Varendra University, Rajshahi, Bangladesh

## Abstract

**Purpose-**The Russia-Ukraine conflict and 19 pandemics have severely damaged the world economy. Banking institutions are crucial to the functioning of any economy, and their financial standing is a vital indicator of the economy's stability. Any major development, be it political or economic, has an impact on the banking industry. The dollar rate's volatility and other issues hurt the GDP. Therefore, the study examines banking performance in vulnerable global situations before and during the pandemic. This study utilizes 7 years of panel data to analyze global financial crisis banking performance. **Design/methodology-** Eight ratios were used to compare the banks' profitability, efficiency, liquidity position, and default risk: return on asset, asset utilization ratio, operational efficiency ratio, debt to asset ratio, loan to deposit ratio, loan to asset ratio, credit risk, and bank size. The descriptive statistics show lower ROA and AUR values for banks, but a lower CR value suggests that pandemic-era borrowers will repay their loans on time. **Findings –** Due to their reliance on borrowed capital, banks may be more vulnerable to default and financial leverage since they lack the liquidity to meet unforeseen requirements for funds. This is indicated by the higher mean values of DAR, LDR, and LAR. Ratio analysis shows that pre-pandemic banks profited well throughout the pandemic. State-owned banks have a worse position in profitability, efficiency, and default risk but a better position in liquidity in both study periods. Conventional banks placed first in profitability, but Islamishariah-based banks placed first in efficiency, high liquidity risk, and low default risk. **Originality –**This study will help bank officials find the flaw and prevent it from improving financial performance and recovering from the global crisis. This may assist bank investors and depositors in choosing wisely.

## Keywords

Financial Performance, Global Financial Crisis, Ratio Analysis, Conventional Banks, Islami Shariah-Based Banks, State-owned Banks in Bangladesh

## 1. Introduction

Banking is a solid foundation for any nation's economic growth. Banks are crucial to every nation's financial market. A nation's banking system's robustness is intricately linked to its economy's vitality. [2] Financial institutions are vital to the

economy by collecting deposits from surplus units and redistributing those monies to deficit units, promoting regional growth and maintaining financial stability. In the aftermath of the war in Bangladesh, there has been a notable escalation in

\*Corresponding author: [tamal@vu.edu.bd](mailto:tamal@vu.edu.bd) (Tamal Chakroborty)

**Received:** 28 April 2024; **Accepted:** 29 May 2024; **Published:** 13 June 2024



Copyright: © The Author(s), 2024. Published by Science Publishing Group. This is an **Open Access** article, distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

market rivalry, prompting the banking sector to expand its range of services to retain existing clients and secure a larger market share, thereby establishing itself as a dominant player in the market. However, the journey does not conclude at this point. Banks must be dynamic, research, and develop to survive in this competitive market. [4] Bangladesh Bank oversees and supervises 61 scheduled banks under the Bank Company Act 1991 and Bangladesh Bank Order 1972. The four sections of these banks are State-owned Commercial Banks (6), Foreign Commercial Banks (9), Private Commercial Banks (43=conventional bank 33+Islami Shariah-based bank 10), and 3 Specialized Banks.6. Bangladeshi banks' intellectual capital (IC) boosts performance. In Bangladesh, capital-employed efficiency is more critical in bank performance than structural and human capital efficiency [5]. Financial institutions have needed help reaching a broad audience for financial services, but they have achieved ground-breaking success by promoting and growing agent banking [6].

The current study examined fifteen conventional, Islamic shariah-based, and state-owned banks for empirical testing, and a brief overview of these banks reveals that, like traditional banks, they are private commercial banks that carry out their banking roles in a conventional manner, i.e., Interest-driven activities. Simply put, they accept deposits from people who wish to save money and then lend or advance that money to people who need it in exchange for interest. The number of traditional banks currently in operation stands at 33.

Islami Shariah-based banks are private commercial banks as well. However, based on Islami Shariah-based principles, they primarily carry out banking operations following the Profit-Loss Sharing (PLS) mode. Bangladesh is home to ten Islamic Shariah-compliant banks at present. State-owned banks in Bangladesh are commercial banks wholly or predominantly owned by the Government of Bangladesh. Currently, there exist a total of six banks falling inside this particular category.

In the last two decades, a new era has been ushered into the economy of Bangladesh. It broke all the records in the economic sectors, including GDP growth rate, Per-capita income, literacy rate, average life expectancy, etc. The performance of the banking sector was also advancing, synchronizing with the economic development of Bangladesh. However, the world has faced a severe financial crisis in the last three to four years that has affected the world economy adversely, especially the banking sector. The Russia-Ukraine conflict and the COVID-19 outbreak are the two most important events. Several world-renowned commercial banks, including Signature Bank and Silicon Valley Bank of USA, have been bankrupted in the last few months, which has made world economists think again. In that sense, the commercial banks of Bangladesh are not supposed to be free from that risk. Despite the struggles to recover their financial strength, commercial banks still have some complications leading to

decreasing financial outcomes.

So, this research aims to look at how well and efficiently some conventional, Islami Shariah-based, and state-owned banks in Bangladesh did financially during the global financial crisis caused by the Russia-Ukraine conflict and COVID-19 outbreak. Moreover, assessing the profitability, liquidity, and deposit position and comparing the risk and efficiency among those empirical banks before and after the global crisis is also the demanded objective of the study.

## 2. Literature Review

Financial institutions that fared better before the COVID-19 outbreak were likewise more successful during it. EBL, AIBL, and BBL all outperformed on their fronts nearly totally in both cases. During the COVID-19 pandemic, high rates of non-performing loans, extra liquid assets, hedging-capital, and incorrect bank size harmed banks' profitability. On the other hand, because of lower leverage and inflation, the bank made more money during this period [9].

Panel data from 1137 BRICS institutions showed that large banks are more competent than small banks in competitive marketplaces and that competition performance and risk are nonlinear. According to a study, as efficient as giant banks during crises, small institutions share risk and are stable in extremely intense markets but less steady in competitive contexts. [18].

ROA increases when the capital adequacy ratio is high, but this is not statistically important. Private commercial banks have more excellent Advance-Deposit Ratio, Capital Adequacy Ratio, and Return on Assets than state-owned banks, according to T-test. Conversely, private commercial banks have much lower non-performing loans than state-owned banks. The study discovered that Bangladeshi commercial banks are still apprehensive about steady credit risk, a key indicator of how well a bank will do financially [7].

Key financial variables affect the banking sector's profitability; thus, policymakers should prioritize rapid economic growth and risk recovery. Islamic banks' financial success is better and more forward-looking than traditional banks. Islamic banks' ROE and ROA positions are expanding faster than conventional banks. Islamic banks also have more earnings per share than their conventional counterparts [9].

A study aimed to scrutinize and conjecture the economic sustainability and flexibility of commercial banks in response to the adverse belongings of the COVID-19 epidemic in Bangladesh found that based on the performance scores under HELLWIG and TOPSIS methods, DBBL and EBL are the utmost resilient banks, and ONE BANK is the wickedest resilient bank in dealing the COVID-19 epidemic shudder [10].

During COVID-19, financial operations encountered a challenging circumstance. CSR represents a responsibility to the community. Dutch-Bangla Bank Limited and Islami Bank Bangladesh Limited are the top providers of CSR money for

2018–2019, according to a study of the CSR initiatives of ten banks conducted between 2018 and 2021. In 2020–2022, IBBL and EXIM Bank were the top contributors during the COVID. CSR's contribution has steadily risen since the COVID-19 outbreak began [2].

A CAMEL test revealed that, except for management quality, regular private commercial banks and Islamic banks in Bangladesh performed similarly. In Bangladesh, Islamic banks outperform traditional private commercial banks regarding capital sufficiency and liquidity position, while conventional banks do better regarding asset and managerial quality. According to a study from 2015 to 2019, Islamic banks' capital adequacy ratios have an improving trend, while asset quality shows no appreciable variances [4].

The liquidity and financial soundness of Bangladeshi listed banks decreased after the COVID-19 outbreak, according to a study. Compared to commercial banks, Islamic banks are in worse financial shape, and all of them are consistently in the red zone. [15]

Another study [11] found that Islamic banks have less cash than regular banks. Both types of banking are comparable, except for liquidity. In the chosen period, Exim Bank Limited and Al-Arafah Islamic Bank Outperformed Islamic banks, and Dutch-Bangla Bank Limited and Mercantile Bank Limited topped conventional banks.

After doing the CAMEL Rating Analysis, all selected Islamic Banks had composite solid ratings. They meet all criteria for soundness, including managerial quality, asset quality, capital adequacy, liquidity conditions, and earning potential. [3]

In the banking industry, financial stability is of paramount importance. Market concentration and income diversity in the global financial system have confident and nonlinear effects on financial solidity and adverse and non-linear effects on bank risk, according to research conducted by 206 nations between 1994 and 2015. The banking sector has lower soundness levels and higher hazards [20].

These days, everyone is talking about fintech. Fintech, such as machine learning, AI, block chain, and other policymaking layers, benefits the banking sector, but it also has drawbacks like overreliance on increased unemployment, technology, high costs, fraud, and personal data security risks [23].

Liquidity risk is not affected by the investment-to-asset ratio, according to a survey of selected private banks, but is affected by the return on equity ratio. Liquid asset ratios, investment in assets, return on equity, and liquidity risk all impact each other. Liquid asset ratio is one factor that affects liquidity risk. Compared to public banks, private banks are more fluid and riskier. The debt-to-equity ratios of private banks are lower than those of public banks. The private sector should reduce its liquidity risk. Additionally, public banks must lower their debt-to-equity ratio. [16]

In comparison to public banks, private banks significantly outperform them in responsiveness and assurance, according to a study from Ethiopia, although there is still room for de-

velopment. Compared to public banks, private banks have much better service quality in terms of how quickly they respond and how sure they are, but they still have a long way to go. [1]

Internal performance measured by return on assets, market performance measured by Tobin's Q model (price/book ratio), and economic performance measured by monetary value add all show that credit risk, operational efficiency, bank size, and asset management have a significant impact on the financial performance of Bangladeshi commercial banks. [14]

Using regression analysis, a study determined that public commercial banks in Nepal are less efficient than private commercial banks. From 2005 to 2010, none of the banks met the capital adequacy standard, which should be 19.5% of all risk-weighted assets. The CDR for the publicly traded banks reveals that their level of liquidity was below the threshold. Due to significant cumulative losses and capital below the required level in Nepal's public banks, the results demonstrate that ROA was adversely linked with IETTTL (-0.251), CDR (-0.279), and CAR (-0.478). Political involvement, lousy management, high overhead costs, and inadequate collateral quality deteriorated public sector banks' financial health. [12]

In Bangladesh, Islamic banking is still in its infancy, which explains why it has a small market share compared to conventional financial institutions. By cutting back on non-expenses and liabilities, ratio analysis research, Z test analysis, and descriptive analysis propose that banks should spend their capital in extra profitable industries. To increase active income, banks should lower their running costs. [21]

Although Islamic banks are less efficient than conventional banks, they are better capitalized, have higher asset quality, and have higher intermediation ratios. Islamic banks performed better in asset quality and capitalization during a financial crisis. Surprisingly, the zakat ratio performance measurement does not indicate a financial crisis effect on banking performance. [17]

Private banks are more financially stable than their public sector counterparts. Except for the Return on Assets, Provision coverage ratio, and Deposit ratio, a study of ten Indian private and public banks indicated that private banks earn more money than public banks. [19]

### 3. Methodology

#### 3.1. Population, Sample Size, and Date Set

The study encompasses all scheduled commercial banks, including state-owned, conventional, and Islamic Shari'ah-based banks and three specialized banks operating in Bangladesh. The representative sample size is fifteen, comprising five state-owned, five traditional, and five Islamic Shari'ah-based banks. The panel data spans seven years, from 2016 to 2022. This study split the time into two parts for analysis. The first part covered 2016 through 2019 and was

labeled the pre-pandemic period. The second part covered 2020 through 2022 and was labeled the pandemic period. The

banks are selected randomly. The list of the selected banks is given below:

**Table 1.** Sample size.

Conventional banks	Acronym	IslamiShariah-based banks	Acronym	State owned banks	Acronym
Mercantile Bank Ltd.	MBL	Islami Bank Bangladesh Ltd.	IBBL	Sonali Bank Ltd.	SBL
Dutch-Bangla Bank Ltd.	DBBL	Shahjalal Islami Bank Ltd.	SIBL	Janata Bank Ltd.	JBL
BRAC Bank Ltd.	BBL	Union Bank Ltd.	UBL	Rupali Bank Ltd.	RBL
IFIC Bank Ltd.	IBL	EXIM Bank Ltd.	EXIMBL	Agrani Bank Ltd.	ABL
National Credit & Commerce Bank Ltd.	NCCBL	First Security Islami Bank Ltd.	FSIBL	Bangladesh Development Bank Ltd.	BDBL

Source: Authors' Illustration

Since this is a study based entirely on secondary data, all the information came from publicly available sources, such as the financial statements and annual reports of the selected banks and the Bangladesh Bank's website. Eight interrelated

ratios have been used here to compare the profitability, efficiency, liquidity position, and default risk of the studied banks that are given below:

**Table 2.** Data set.

Financial performance	Ratios	Acronym	Calculation methods
Profitability	Return on asset	ROA	Net income ÷ Total asset
	Asset utilization ratio	AUR	Reserves for doubtful loans ÷ total loans and advances
Efficiency	Operating efficiency ratio	OER	Total operating expenses ÷ Net interest income
	Debt to asset ratio	DAR	Total Liabilities ÷ Total Assets
Liquidity position	Loan to deposit ratio	LDR	Total loans and advances ÷ Total deposit
	Loan to asset ratio	LAR	Total loans and advances ÷ Total asset
Default risk	Credit risk	CR	Reserve for doubtful loan ÷ Total loan and advances
	Bank size	BS	Ln (Total Asset)

Source: Authors' Illustration

### 3.2. Data Analysis Method

The quantitative research approach is used to compare the financial performance of the chosen commercial banks because the data is secondary. Descriptive statistics and ratio analysis were used to compare and examine the banks' financial performance and efficiency, and SPSS 22 and Microsoft Excel were used to produce the output. The study used descriptive statistics to compare the financial performance of the selected banks, and ratio analysis was used to compare and observe the significant differences in outcomes individually

and collectively between pre- and post-pandemic periods.

### 3.3. Analysis and Interpretation

#### Descriptive Statistical Analysis

The study's descriptive statistics (Table 3) indicate all mentioned banks' pre- and post-pandemic financial statuses. This analysis found that banks' mean ROA and AUR values declined throughout the pandemic, indicating weaker profitability, while their negative OER values indicated net interest losses.

Notably, the lower CR value tells the writers that the bank's

borrowers are likely to repay their loans on schedule without defaulting. This bodes well for the study. On the other hand, DAR, LDR, and LAR have increasing mean values, indicating that banks lack liquidity to cover unexpected cash re-

quirements and rely primarily on borrowed capital, which accelerates financial leverage. [8] This is very alarming for the bank's financial strength.

**Table 3.** Descriptive Statistics.

Pre-Pandemic period (2016-2019)						Pandemic period (2020-2022)				
Variables	N	Minimum	Maximum	Mean	Std. Deviation	N	Minimum	Maximum	Mean	Std. Deviation
Return on asset	60	-.0112	.0183	.0065	.00545	45	.0001	.0130	.0052	.00374
Asset utilization ratio	60	.01936	.07522	.0386	.01344	45	.017475	.0626002	.0328	.01182
operating efficiency ratio	60	-4.8824	24.0142	1.457	3.8500	45	93.2780	43.53708	-.1719	16.135
Debt to asset ratio	60	.66569	.96577	.9180	.06853	45	.655647	.9756161	.9242	.07162
Loan to deposit ratio	60	.37481	1.1151	.8316	.17273	45	.467148	1.107646	.8632	.15744
Loan to asset ratio	60	.30480	.83936	.6478	.15701	45	.369220	.849933	.6553	.13720
Credit risk	60	.00005	.03029	.0052	.00613	45	.000009	.0095900	.0033	.00273
Bank size	60	10.7375	12.16834	11.5365	.34303	45	10.7477	12.26436	11.7048	.36290

Source: Authors' Illustration from SPSS Result

#### Ratio Analysis

This study used ratio analysis to compare the financial performance, profitability, liquidity position, deposit position, etc. of the selected banks pre- and post-pandemic. It also

observed major differences in outcomes. Multiple ratios have been used here for the analysis purpose and the ratio results and interpretations are shown part by part through the following tables (from table 4 to table 11).

**Table 4.** Return on asset (ROA).

Bank Sector	Bank Name	Pre-Pandemic Period (2016-2019)				Pandemic Period (2020-2022)			
		ROA	Iso-latePlace	Composit-eROA	Place	ROA	Iso-latePlace	Composit-eROA	Place
Conventional banks	MBL	1.08%	2 <sup>nd</sup>			0.77%	5 <sup>th</sup>		
	DBBL	1.03%	3 <sup>rd</sup>			1.17%	1 <sup>st</sup>		
	BBL	1.58%	1 <sup>st</sup>	1.08%	1 <sup>st</sup>	1.05%	2 <sup>nd</sup>	0.87%	1 <sup>st</sup>
	IBL	0.74%	9 <sup>th</sup>			0.46%	9 <sup>th</sup>		
	NCCBL	0.98%	4 <sup>th</sup>			0.92%	3 <sup>rd</sup>		
	IBBL	0.57%	10 <sup>th</sup>			0.33%	10 <sup>th</sup>		
IslamiShari-ahbasedBanks	SIBL	0.75%	8 <sup>th</sup>			0.87%	4 <sup>th</sup>		
	UBL	0.76%	7 <sup>th</sup>	0.68%	2 <sup>nd</sup>	0.50%	8 <sup>th</sup>	0.57%	2 <sup>nd</sup>
	EXIMBL	0.85%	5 <sup>th</sup>			0.57%	7 <sup>th</sup>		
	FSIBL	0.47%	11 <sup>th</sup>			0.58%	6 <sup>th</sup>		

Bank Sector	Bank Name	Pre-Pandemic Period (2016-2019)				Pandemic Period (2020-2022)			
		ROA	IsolatePlace	Composit-eROA	Place	ROA	IsolatePlace	Composit-eROA	Place
State owned banks	SBL	0.28%	12 <sup>th</sup>	0.20%	3 <sup>rd</sup>	0.21%	11 <sup>th</sup>	0.12%	3 <sup>rd</sup>
	JBL	0.18%	13 <sup>th</sup>			0.11%	14 <sup>th</sup>		
	RBL	-0.26%	15 <sup>th</sup>			0.04%	15 <sup>th</sup>		
	ABL	0.04%	14 <sup>th</sup>			0.12%	12 <sup>th</sup>		
	BDBL	0.76%	6 <sup>th</sup>			0.12%	13 <sup>th</sup>		

Source: Authors' Illustration from SPSS Result

Interpretation: The return on asset ratio measures a company's efficiency in generating profit from its total assets. A more excellent ratio indicates better corporate performance.

Table 4 indicates that in individual performance, BBL, MBL, and DBBL were in 1st, 2nd, and 3rd position, respectively. In contrast, RBL was the last in the series and showed a negative return before the pandemic. On the other hand,

DBBL, MBL, and NCCBL held 1st, 2nd, and 3rd positions, respectively, during the pandemic period. Here, the RBL again has the last place on the list, though its return became positive. In combined performance, the conventional banking sector holds the 1st position, showing the highest rate of return, and state-owned banks remain in the third position.

**Table 5.** Asset Utilization Ratio (AUR).

BankSector	Bank-Name	Pre-Pandemic Period (2016-2019)				Pandemic Period (2020-2022)			
		AUR	IsolatePlace	Com-positeAUR	Place	AUR	IsolatePlace	Com-positeAUR	Place
Conventional banks	MBL	4.46%	3 <sup>rd</sup>	5.21%	1 <sup>st</sup>	3.73%	4 <sup>th</sup>	4.51%	1 <sup>st</sup>
	DBBL	6.28%	2 <sup>nd</sup>			5.62%	2 <sup>nd</sup>		
	BBL	7.23%	1 <sup>st</sup>			6.01%	1 <sup>st</sup>		
	IBL	3.67%	7 <sup>th</sup>			3.06%	6 <sup>th</sup>		
	NCCBL	4.40%	4 <sup>th</sup>			4.14%	3 <sup>rd</sup>		
IslamiShari-ahbasedBanks	IBBL	3.97%	5 <sup>th</sup>	3.17%	2 <sup>nd</sup>	2.80%	8 <sup>th</sup>	2.89%	2 <sup>nd</sup>
	SIBL	2.52%	13 <sup>th</sup>			3.59%	5 <sup>th</sup>		
	UBL	3.18%	10 <sup>th</sup>			2.77%	9 <sup>th</sup>		
	EXIMBL	3.35%	8 <sup>th</sup>			2.59%	12 <sup>th</sup>		
	FSIBL	2.83%	11 <sup>th</sup>			2.71%	10 <sup>th</sup>		
State owned banks	SBL	2.52%	14 <sup>th</sup>	2.98%	3 <sup>rd</sup>	2.71%	11 <sup>th</sup>	2.43%	3 <sup>rd</sup>
	JBL	2.82%	12 <sup>th</sup>			2.16%	14 <sup>th</sup>		
	RBL	2.49%	15 <sup>th</sup>			2.00%	15 <sup>th</sup>		
	ABL	3.31%	9 <sup>th</sup>			2.31%	13 <sup>th</sup>		
	BDBL	3.76%	6 <sup>th</sup>			2.95%	7 <sup>th</sup>		

Source: Authors' Illustration from SPSS Result



Interpretation: A high asset turnover ratio suggests the bank is efficient and makes more per dollar. A low asset turnover ratio indicates the bank needs to be better at using its resources and may struggle.

Table 5 shows that the BBL and DBBL generate more revenue per dollar of asset because they have the highest AUR and rank 1st and 2nd in individual performance both pre- and

post-pandemic, even though their AUR value has decreased. The state-owned bank RBL holds the last position in this case, showing poor efficiency in both periods, which is very alarming for that bank. Again, considering the composite ratio, the conventional banking sector's performance is better than that of Islamic Shariah-based or state-owned banks.

**Table 6.** Operational Efficiency Ratio (OER).

BankSector	Bank-Name	Pre-Pandemic Period (2016-2019)				Pandemic Period (2020-2022)			
		OER	Iso-latePlace	Composite-OER	Place	OER	Iso-latePlace	Composite-OER	Place
Conventional banks	MBL	108.45%	12 <sup>th</sup>			190.53%	10 <sup>th</sup>	137.14%	2 <sup>nd</sup>
	DBBL	99.47%	9 <sup>th</sup>			112.28%	7 <sup>th</sup>		
	BBL	103.63%	10 <sup>th</sup>	84.16%	2 <sup>nd</sup>	142.52%	9 <sup>th</sup>		
	IBL	104.85%	11 <sup>th</sup>			131.93%	8 <sup>th</sup>		
	NCCBL	4.40%	7 <sup>th</sup>			108.43%	6 <sup>th</sup>		
Islami Shariah based Banks	IBBL	3.67%	6 <sup>th</sup>			90.60%	5 <sup>th</sup>	74.88%	1 <sup>st</sup>
	SIBL	3.64%	5 <sup>th</sup>			81.47%	3 <sup>rd</sup>		
	UBL	3.18%	3 <sup>rd</sup>	3.34%	1 <sup>st</sup>	51.12%	1 <sup>st</sup>		
	EXIMBL	3.35%	4 <sup>th</sup>			87.40%	4 <sup>th</sup>		
	FSIBL	2.83%	2 <sup>nd</sup>			63.81%	2 <sup>nd</sup>		
State owned banks	SBL	2.52%	1 <sup>st</sup>			193.07%	11 <sup>th</sup>	-263.57%	3 <sup>rd</sup>
	JBL	810.55%	15 <sup>th</sup>			1013.07%	13 <sup>th</sup>		
	RBL	28.99%	8 <sup>th</sup>	325.05%	3 <sup>rd</sup>	-16.20%	14 <sup>th</sup>		
	ABL	606.08%	14 <sup>th</sup>			-3067.28%	15 <sup>th</sup>		
	BDBL	235.09%	13 <sup>th</sup>			559.47%	12 <sup>th</sup>		

Source: Authors' Illustration from SPSS Result

Interpretation: The operating ratio, or operational efficiency ratio, indicates how well the bank is performing. A lower ratio indicates the bank spends less to make more money. An efficiency ratio under 50% is ideal. An increasing efficiency ratio indicates rising expenses or falling revenues for a bank. However, a negative efficiency ratio indicates a bank's net interest loss.

Table 6 shows that Sonali Bank Ltd. was in the first position, and its operational efficiency ratio was excellent before the pandemic. The second and third positions were in the hands of two Islami Shariah-based banks, First Security

Islamic Bank Limited and Union Bank Limited, respectively, in this category. Three state-owned banks, BDBL, ABL, and JBL, were last in the line. In terms of combined performance, the Islami Shariah-based banks were in the first position, and the ratio value was satisfactory.

In the pandemic period, all the bank's OE ratio has increased above 50%, which shows their poor financial performance. Most importantly, the state-owned banks are in a dangerous position, and the Islami Shariah-based Banks are in a good place comparatively in their individual and combined performance.

**Table 7.** Debt to Asset Ratio (DAR).

BankSector	Bank-Name	Pre-Pandemic Period (2016-2019)				Pandemic Period (2020-2022)			
		DAR	Iso-latePlace	Compo-siteDAR	Place	DAR	Iso-latePlace	CompositeDAR	Place
Conventional banks	MBL	93.23%	7 <sup>th</sup>			94.13%	8 <sup>th</sup>		
	DBBL	92.33%	6 <sup>th</sup>			92.83%	5 <sup>th</sup>		
	BBL	89.84%	2 <sup>nd</sup>	91.88%	2 <sup>nd</sup>	87.10%	2 <sup>nd</sup>	91.75%	2 <sup>nd</sup>
	IBL	91.97%	3 <sup>rd</sup>			92.60%	4 <sup>th</sup>		
	NCCBL	92.05%	4 <sup>th</sup>			92.08%	3 <sup>rd</sup>		
IslamiShariah based Banks	IBBL	94.42%	11 <sup>th</sup>			95.94%	12 <sup>th</sup>		
	SIBL	93.33%	8 <sup>th</sup>			93.68%	6 <sup>th</sup>		
	UBL	94.40%	10 <sup>th</sup>	94.14%	3 <sup>rd</sup>	95.30%	10 <sup>th</sup>	95.06%	3 <sup>rd</sup>
	EXIMBL	92.07%	5 <sup>th</sup>			94.00%	7 <sup>th</sup>		
	FSIBL	96.48%	15 <sup>th</sup>			96.39%	13 <sup>th</sup>		
State owned banks	SBL	94.78%	13 <sup>th</sup>			95.03%	9 <sup>th</sup>		
	JBL	93.84%	9 <sup>th</sup>			95.89%	11 <sup>th</sup>		
	RBL	96.46%	14 <sup>th</sup>	89.40%	1 <sup>st</sup>	97.36%	15 <sup>th</sup>	90.46%	1 <sup>st</sup>
	ABL	94.54%	12 <sup>th</sup>			96.41%	14 <sup>th</sup>		
	BDBL	67.38%	1 <sup>st</sup>			67.63%	1 <sup>st</sup>		

Source: Authors' Illustration from SPSS Result

Interpretation: The corporation benefits from a lower debt-to-asset ratio. A 100% ratio means the company's liabilities equal its assets. It signifies high business leverage. If the ratio is below 100%, the corporation has more assets than liabilities.

Table 7 shows that BDBL, BBL, IBL, and NCCBL have excellent debt-to-asset ratios pre- and post-pandemic, while FSIBL and RBL have weaker ratios. With the lowest leverage pre- and post-pandemic, state-owned banks fare well.

**Table 8.** Loan to Deposit Ratio (LDR).

BankSector	Bank Name	Pre-Pandemic Period (2016-2019)				Pandemic Period (2020-2022)			
		LDR	Iso-latePlace	Compos-iteLDR	Place	LDR	Iso-latePlace	Compos-iteLDR	Place
Conventional banks	MBL	96.40%	14 <sup>th</sup>			99.97%	13 <sup>th</sup>		
	DBBL	86.34%	6 <sup>th</sup>			79.35%	5 <sup>th</sup>		
	BBL	92.83%	9 <sup>th</sup>	91.84%	2 <sup>nd</sup>	87.52%	7 <sup>th</sup>	90.74%	2 <sup>nd</sup>
	IBL	90.77%	7 <sup>th</sup>			91.71%	8 <sup>th</sup>		
	NCCBL	92.84%	10 <sup>th</sup>			95.18%	10 <sup>th</sup>		
IslamiShari-ahbasedBanks	IBBL	93.83%	12 <sup>th</sup>			92.34%	9 <sup>th</sup>		
	SIBL	104.86%	15 <sup>th</sup>	95.69%	3 <sup>rd</sup>	99.26%	12 <sup>th</sup>	99.03%	3 <sup>rd</sup>
	UBL	93.08%	11 <sup>th</sup>			99.09%	11 <sup>th</sup>		



BankSector	Bank Name	Pre-Pandemic Period (2016-2019)				Pandemic Period (2020-2022)			
		LDR	Iso- latePlace	Compos- iteLDR	Place	LDR	Iso- latePlace	Compos- iteLDR	Place
State owned banks	EXIMBL	94.69%	13 <sup>th</sup>			102.78%	15 <sup>th</sup>		
	FSIBL	91.99%	8 <sup>th</sup>			101.65%	14 <sup>th</sup>		
	SBL	41.92%	1 <sup>st</sup>			53.28%	1 <sup>st</sup>		
	JBL	73.34%	5 <sup>th</sup>			75.69%	4 <sup>th</sup>		
	RBL	66.31%	3 <sup>rd</sup>	61.96%	1 <sup>st</sup>	67.88%	3 <sup>rd</sup>	69.19%	1 <sup>st</sup>
	ABL	61.00%	2 <sup>nd</sup>			64.61%	2 <sup>nd</sup>		
	BDBL	67.23%	4 <sup>th</sup>			84.50%	6 <sup>th</sup>		

Source: Authors' Illustration from SPSS Result

Interpretation: The loan-to-deposit ratio assesses a bank's liquidity by comparing loans to deposits. This ratio measures a bank's liquidity, risk, fund utilization, and intermediation operations. A high ratio indicates the bank is riskier because it has fewer cash reserves to cover unexpected losses and vice versa. This could also mean the bank borrows extensively from other institutions to fund its lending, which is problematic during economic volatility.

Table 8 shows that before the pandemic, the five

state-owned banks held the top position compared to conventional and Islami shariah-based banks in their individual and combined performance. The scenario does not change significantly during the pandemic except for the increased ratio values. So, the authors can conclude that the conventional and Islamic Shariah banks are suffering from a liquidity crisis and taking a higher risk in loan disbursement than the state-owned banks.

**Table 9.** Loan to Asset Ratio (LAR).

BankSector	Bank- Name	Pre-pandemic period (2016-2019)				Pandemic period (2020-2022)			
		LAR	Iso- latePlace	Composite- LAR	Place	LAR	Iso- latePlace	Composite- LAR	Place
Conventional banks	MBL	75.46%	10 <sup>th</sup>			73.93%	10 <sup>th</sup>		
	DBBL	65.39%	7 <sup>th</sup>			61.84%	7 <sup>th</sup>		
	BBL	64.91%	6 <sup>th</sup>	70.03%	2 <sup>nd</sup>	61.26%	6 <sup>th</sup>	68.20%	2 <sup>nd</sup>
	IBL	72.01%	8 <sup>th</sup>			74.25%	11 <sup>th</sup>		
	NCCBL	72.40%	9 <sup>th</sup>			69.71%	9 <sup>th</sup>		
IslamiShari- ahbasedBanks	IBBL	78.41%	12 <sup>th</sup>			74.89%	12 <sup>th</sup>		
	SIBL	75.50%	11 <sup>th</sup>			68.84%	8 <sup>th</sup>		
	UBL	79.65%	14 <sup>th</sup>	78.54%	3 <sup>rd</sup>	80.20%	13 <sup>th</sup>	77.92%	3 <sup>rd</sup>
	EXIMBL	78.78%	13 <sup>th</sup>			81.47%	14 <sup>th</sup>		
	FSIBL	80.38%	15 <sup>th</sup>			84.19%	15 <sup>th</sup>		
State-owned banks	SBL	34.91%	2 <sup>nd</sup>			42.02%	2 <sup>nd</sup>		
	JBL	58.14%	5 <sup>th</sup>	45.78%	1 <sup>st</sup>	60.34%	5 <sup>th</sup>	50.49%	1 <sup>st</sup>
	RBL	55.39%	4 <sup>th</sup>			58.02%	4 <sup>th</sup>		
	ABL	48.34%	3 <sup>rd</sup>			53.47%	3 <sup>rd</sup>		

BankSector	Bank-Name	Pre-pandemic period (2016-2019)				Pandemic period (2020-2022)			
		LAR	Iso-latePlace	Composite-LAR	Place	LAR	Iso-latePlace	Composite-LAR	Place
	BDBL	32.12%	1 <sup>st</sup>			38.57%	1 <sup>st</sup>		

Source: Authors' Illustration from SPSS Result

Interpretation: The essential measure of the asset composition of a bank quickly shows what percentage of the bank's assets is dedicated to loans. A higher rate indicates a lower bank liquidity position exposed to higher default risk. Banks with lower loan-to-asset ratios may do better during recessions.

Looking at Table 9, the study can argue that the LAR reveals an identical performance with LDR. Here, the state-owned banks again show better performance and hold a higher liquidity position than the other two sector banks in their individual and group performance in both periods.

**Table 10.** Credit Risk(CR).

BankSector	Bank Name	Pre-Pandemic Period (2016-2019)				Pandemic Period (2020-2022)			
		CR	IsolatePlace	CompositeCR	Place	CR	IsolatePlace	CompositeCR	Place
Conventional banks	MBL	0.35%	8 <sup>th</sup>			0.54%	13 <sup>th</sup>		
	DBBL	0.28%	7 <sup>th</sup>			0.16%	4 <sup>th</sup>		
	BBL	0.37%	11 <sup>th</sup>	0.33%	2 <sup>nd</sup>	0.45%	12 <sup>th</sup>	0.32%	2 <sup>nd</sup>
	IBL	0.27%	6 <sup>th</sup>			0.22%	6 <sup>th</sup>		
	NCCBL	0.36%	10 <sup>th</sup>			0.25%	7 <sup>th</sup>		
IslamiShariahbasedBanks	IBBL	0.25%	5 <sup>th</sup>			0.35%	10 <sup>th</sup>		
	SIBL	0.03%	1 <sup>st</sup>			0.01%	1 <sup>st</sup>		
	UBL	0.15%	2 <sup>nd</sup>	0.16%	1 <sup>st</sup>	0.21%	5 <sup>th</sup>	0.27%	1 <sup>st</sup>
	EXIMBL	0.19%	3 <sup>rd</sup>			0.06%	2 <sup>nd</sup>		
	FSIBL	0.20%	4 <sup>th</sup>			0.74%	14 <sup>th</sup>		
State-owned banks	SBL	1.28%	13 <sup>th</sup>			0.38%	11 <sup>th</sup>		
	JBL	1.44%	14 <sup>th</sup>			0.30%	8 <sup>th</sup>		
	RBL	0.77%	12 <sup>th</sup>	1.07%	3 <sup>rd</sup>	0.34%	9 <sup>th</sup>	0.40%	3 <sup>rd</sup>
	ABL	0.35%	9 <sup>th</sup>			0.13%	3 <sup>rd</sup>		
	BDBL	1.52%	15 <sup>th</sup>			0.84%	15 <sup>th</sup>		

Source: Authors' Illustration from SPSS Result

Interpretation: Credit risk means customers may delay or not make payments, directly affecting a bank's profitability and stability. High levels of credit risk can lead to increased default rates, loan losses, and reduced profits. It can also impact a bank's capital adequacy and overall financial health.

Table 10 shows that state-owned banks have higher default risk both pre- and post-pandemic, so the regulatory authority should consider this situation more significantly. ABL has

strictly controlled its credit risk during the pandemic, ranking third compared to 9th in pre-pandemic. This is a good sign of the study. Not only that, all the state-owned banks have also shown better performance during the pandemic period in controlling credit risk, affecting their composite performance positively. However, the Islami Shariah bank achieved first in this criterion in both periods, though their combined performance worsened comparatively during the global crisis. In

contrast, the conventional banks held the second position in both periods, and the ratio value was almost unchanged.

**Table 11.** Bank Size (BS).

BankSector	Bank-Name	Pre-Pandemic Period (2016-2019)				Pandemic Period (2020-2022)			
		BS	IsolatePlace	CompositeBS	Place	BS	IsolatePlace	CompositeBS	Place
Conventional banks	MBL	1142.34%	11 <sup>th</sup>			1155.48%	12 <sup>th</sup>		
	DBBL	1151.68%	10 <sup>th</sup>			1171.01%	10 <sup>th</sup>		
	BBL	1152.62%	9 <sup>th</sup>	1144.40%	3 <sup>rd</sup>	1173.28%	8 <sup>th</sup>	1161.17%	3 <sup>rd</sup>
	IBL	1141.86%	12 <sup>th</sup>			1161.45%	11 <sup>th</sup>		
	NCCBL	1133.51%	14 <sup>th</sup>			1144.63%	14 <sup>th</sup>		
Islamic banks	IBBL	1197.82%	2 <sup>nd</sup>			1221.00%	2 <sup>nd</sup>		
	SIBL	1134.47%	13 <sup>th</sup>			1150.22%	13 <sup>th</sup>		
	UBL	1111.77%	15 <sup>th</sup>	1150.92%	2 <sup>nd</sup>	1138.10%	15 <sup>th</sup>	1171.02%	2 <sup>nd</sup>
	EXIMBL	1154.85%	8 <sup>th</sup>			1171.74%	9 <sup>th</sup>		
	FSIBL	1155.68%	7 <sup>th</sup>			1174.04%	7 <sup>th</sup>		
State-owned banks	SBL	1211.46%	1 <sup>st</sup>			1223.06%	1 <sup>st</sup>		
	JBL	1192.24%	3 <sup>rd</sup>			1207.42%	3 <sup>rd</sup>		
	RBL	1161.78%	6 <sup>th</sup>	1165.63%	1 <sup>st</sup>	1182.05%	5 <sup>th</sup>	1179.26%	1 <sup>st</sup>
	ABL	1186.42%	4 <sup>th</sup>			1206.01%	4 <sup>th</sup>		
	BDBL	1076.25%	5 <sup>th</sup>			1077.77%	6 <sup>th</sup>		

Source: Authors' Illustration from SPSS Result

Interpretation: Bank size is the natural logarithm of its assets. Large banks are riskier and more complex than small banks due to lesser capital, less steady funding, and more market-based activities. Again, massive bank failures harm an economy's financial system more than small bank failures. One must recognize giant banks' economies of scale potential. As a result, it isn't easy to specify the optimal bank size as it depends on several interrelated factors.

Table 11 exhibits that Sonali Bank Limited is the prime bank in the economy in terms of its total asset both in the pre-pandemic and pandemic period, where Islami Bank Bangladesh Limited and Janata Bank Limited holds 2nd and third position, respectively, and unfortunately, these three large banks have higher credit risk in both periods (in table 10) hence the failure of these banks may make the economy of Bangladesh more vulnerable. Union Bank Limited is the smallest bank in the country, holding low default risk (in Table 10) in both subsequent periods.

## 4. Study Limitations & Future Research Scope

Some limitations of the study include using mainly secondary data due to time restrictions. Bank staff interviews that could have improved internal performance have proven impossible. The sample size of only 15 banks, which covers data from seven years, may need to be more generalizable. The study paper's validity could be improved by increasing sample size and time. The correctness of research conclusions relies on the accuracy of secondary data from data sources, as the research relies solely on secondary data.

A thorough comparison analysis of state-owned, conventional, and Islamic banks based on Shariah can be carried out to comprehend the current situation of the bank's financial health position. Again, introducing new factors (other performance indicators) that can significantly affect bank financial performance may improve research accuracy. In the future, researchers should also look at regional differences between the city and countryside branches of the studied banks to find out which parts make money and which don't.

## 5. Conclusion

COVID-19 has caused an eternal financial crisis for the international economy, and the Russia-Ukraine conflict has made it worse. The Russian-Ukrainian conflict has exacerbated the global financial crisis triggered by COVID-19. This will be considered as a historic event in the upcoming days indisputably. Constant lockdowns, restrictions on public activity, a slowdown in output, a drop in consumer demand, and international trade hurdles are just a few of how it has impacted the behavior of the world's financial sector. A COVID-19 pandemic study found a strong correlation between financial factors, business contracts, stakeholders, and FRD practices. Additionally, it has been shown that there is no discernible connection between financial reporting and disclosure practices and firm functioning or business value. [22]

The banking sector is not beyond this situation. Banks connect shortage and surplus units. Women entrepreneurs have significantly contributed to economic growth but have needed help applying for bank loans. Women faced numerous barriers to loan taking, including discrimination based on gender, education, and employment. [13]

Multiple research works have been conducted on the stability of the banks, financial health position, and liquidity in Bangladesh during the pandemic period of COVID-19. Still, little research has yet been conducted to quantify the impact of the Russia-Ukraine war and COVID-19 on the banks' profitability, efficiency, and default risk and make a comparison among the performance of conventional, IslamiShariah and state-owned banks before the pandemic and during the pandemic situation. For that reason, the authors have chosen the title.

The empirical result shows that most of the banks' profitability and efficiency decreased in the pandemic period compared to the pre-pandemic period; primarily state-owned banks stand in a vulnerable situation, most importantly RBL, where private sector banks, namely BBL and DBBL, are in a strong position in earning profit and Islamishariah based banks are most efficient in asset utilization in both the subsequent periods.

From the viewpoint of default risk, BDBL stands in a precarious position, and the other state-owned banks are not beyond this risk. Still, the good sign is that they started recovering from the situation during the pandemic. IslamiShariah-based Banks hold low default risk, especially ShahjalalIslami Bank Limited.

Interestingly, the liquidity position of state-owned banks is powerful, especially Bangladesh Development Bank Limited (BDBL), which achieved the highest score in this category. Unfortunately, Islamic Shariah banks are the last in the line.

This investigation will help the banking community locate the chink and take preventive steps to boost financial performance and recover from the worldwide crisis.

## Abbreviations

AUR	Asset Utilization Ratio
ROA	Return on Asset
CR	Credit Risk
DAR	Debt to Asset Ratio
LDR	Loan to Deposit Ratio
LAR	Loan to Asset Ratio
PLS	Profit-Loss Sharing
GDP	Gross Domestic Product
CAMEL	Capital Adequacy, Asset Quality, Management Capability, Earnings, Liquidity and Sensitivity to Market Risk
OER	Operational Efficiency Ratio
BS	Bank Size
BRICS	Brazil, Russia, India, China, and South Africa
CDR	Call Deposit Receipt
CAR	Capital Adequacy Ratio
IETTL	Interest Expense to Total Loans
MBL	Mercantile Bank Ltd.
DBBL	Dutch-Bangla Bank Ltd.
BBL	BRAC Bank Ltd.
IBL	IFIC Bank Ltd.
NCCBL	National Credit & Commerce Bank Ltd.
IBBL	Islami Bank Bangladesh Ltd.
SIBL	Shahjalal Islami Bank Ltd.
UBL	Union Bank Ltd.
EXIMBL	EXIM Bank Ltd.
FSIBL	First Security Islami Bank Ltd.
SBL	Sonali Bank Ltd.
JBL	Janata Bank Ltd.
RBL	Rupali Bank Ltd.
ABL	Agrani Bank Ltd.
BDBL	Bangladesh Development Bank Ltd.

## Conflicts of Interest

The authors declare no conflicts of interest.

## References

- [1] Agarwal, D. P., & Kassahun, Z. W. (2017). ASSESSMENT OF SERVICE QUALITY OF PUBLIC AND PRIVATE BANK IN WOLAITA SODO, ETHIOPIA: A COMPARATIVE STUDY. *International Journal of Marketing & Financial Management*, 33-42.
- [2] Ahmed, A., Sultana, M. & Karmakar, A., 2022. Uncovering the Extent of Social Responsibility of Private Commercial Banks: A Comparative Study on CSR Activities during COVID Pandemic. *European Journal of Business and Management*, 14(20). <https://doi.org/10.7176/EJBM/14-20-01>
- [3] Ahsan, M. K. (2016). Measuring Financial Performance Based on CAMEL: A Study on Selected Islamic Banks in Bangladesh. *Asian Business Consortium | ABR*, 47-56.

- [4] Akber, S. M., & Dey, A. (2020). Evaluation of the Financial Performance between Traditional Private Commercial Banks and Islamic Banks in Bangladesh. *International Journal of Islamic Banking and Finance Research*, 1-10. <https://doi.org/10.46281/ijibfr.v4i2.640>
- [5] Akter, A., 2023. Does intellectual capital affect bank performance? Evidence from Bangladesh. *LBS Journal of Management & Research*, 21(2), pp. 171-185. <https://doi.org/10.1108/LBSJMR-05-2022-0016>
- [6] Chakroborty, T. and Sultana, M., Financial Inclusion for Rural Community in Bangladesh through Agent Banking. *IJFMR-International Journal For Multidisciplinary Research*, 5(3). <https://doi.org/10.36948/ijfmr.2023.v05i03.2747>
- [7] Das, P. C., & Noor, P. (2019). Impact of Credit Risk Management on Financial Performance: Panel Evidence from State-Owned and Private Commercial Banks in Bangladesh. *THE COST AND MANAGEMENT*.
- [8] Gazi, D. M., Talukder, M., Molla, M., Hossain, D., & Hossain, A. I. (2022). DOES THE FINANCIAL PERFORMANCE OF ISLAMIC BANKS ARE HIGHER THAN THE TRADITIONAL BANKS IN BANGLADESH? PANEL DATA ANALYSIS. *Indian Journal of Finance and Banking*, 33-46. <https://doi.org/10.46281/ijfb.v9i1.1549>
- [9] Gazi, M. A., Nahiduzzaman, M., Harymawan, I., Masud, A., & Dhar, B. K. (2022). Impact of COVID-19 on Financial Performance and Profitability of Banking Sector in Special Reference to Private Commercial Banks: Empirical Evidence from Bangladesh. *Sustainability*, 2-23. <https://doi.org/10.3390/su14106260>
- [10] Ghosh, R. & Saima, F. N., 2021. Resilience of commercial banks of Bangladesh to the shocks caused by COVID-19 pandemic: an application of MCDM-based approaches. *Asian Journal of Accounting Research*, 6(3), pp. 281-295. <https://doi.org/10.1108/AJAR-10-2020-0102>
- [11] Hossain, S. A., Islam, M., Mahmud, M., & Islam, K. (2017). Evaluation of Financial Performance of Commercial Banks in Bangladesh: Comparative Study Based on CAMEL Approach. *The Millennium University Journal*, 54-77. <https://doi.org/10.58908/tmuuj.v2i1.22>
- [12] Jha, S., & Hui, X. (2012). A comparison of financial performance of commercial banks: A case study of Nepal. *African Journal of Business Management*, 7601-7611. <https://doi.org/10.5897/AJBM11.3073>
- [13] Karmakar, A., Habib, S. N. & Ahmed, A., 2018. Socio-Economic Factors Affecting the Perception of Women Entrepreneurs towards Bank Loan: A Study on Rajshahi City. *Asian Business Review*, 8(3), pp. 105-114. <https://doi.org/10.18034/abr.v8i3.161>
- [14] Karim, R. A., & Alam, T. (2013). An Evaluation of Financial Performance of Private Commercial Banks in Bangladesh: Ratio Analysis. *Journal of Business Studies Quarterly*, 65-77.
- [15] Karim, M. R., Shetu, S. A. & Razia, S., 2021. COVID-19, liquidity and financial health: empirical evidence from South Asian economy. *Asian Journal of Economics and Banking*, 5(3), pp. 307-323. <https://doi.org/10.1108/AJEB-03-2021-0033>
- [16] Lalon, R. M., & Naher, N. (2020). An Empirical Analysis on Liquidity Management of Commercial Banks in Bangladesh: A Comparative Study Between State-Owned and Private Commercial Banks. *Journal of Economics and Business*, 299-312. <https://doi.org/10.31014/aior.1992.03.01.199>
- [17] Mohammed, S. A. S. A.-N. & Muhammed, D. J., 2017. Financial crisis, legal origin, economic status and multi-bank performance indicators: evidence from Islamic banks in developing countries. *Journal of Applied Accounting Research*, 18(2). <https://doi.org/10.1108/JAAR-07-2014-0065>
- [18] Moudud-UI-Huq, S., 2020. Does bank competition matter for performance and risk-taking? empirical evidence from BRICS countries. *International Journal of Emerging Markets*. <https://doi.org/10.1108/IJOEM-03-2019-0197>
- [19] Mubarak, D. ( 2021). AN ASSESSMENT OF FINANCIAL STABILITY OF SELECT PUBLIC AND PRIVATE SECTOR BANKS IN INDIA. *UGC Care Journal*, 22-36.
- [20] Muñoz-Mendoza, J., Yelpe, S. M., Ramos, C. L., & Fuentealba, C. L. (2020). Market Concentration and Income Diversification: Do They Always Promote the Financial Stability of Banking Industry? *Finanzas y Política Económica*, 341-365.
- [21] Nobi, M. N., Azhari, M. R., Islam, S., & Billah, M. (2020). Comparative Financial Position Analysis of Islamic Banking Industries: A Study of Selected Islamic Banks in Bangladesh. *International Journal of Science and Business*, 119-130. <https://doi.org/10.5281/zenodo.4153795>
- [22] Sultana, R., Ghosh, R. & Sen, K. K., 2022. Impact of COVID-19 pandemic on financial reporting and disclosure practices: empirical evidence from Bangladesh. *Asian Journal of Economics and Banking*, 6(1), pp. 122-139.
- [23] Varma, P., Nijjer, S., Sood, K., Grima, S., & Apoga, R. R. (2022). Thematic Analysis of Financial Technology (Fintech) Influence on the Banking Industry. *Risks* 2022, 10, 186, 1-17. <https://doi.org/10.3390/risks10100186>