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Debunking the trends and implications of non-bank financial institutions in Bangladesh financial sector

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ABSTRACT

The purpose of this study is to analyze the trends and implications of selected NBIFs in Bangladesh's financial sector. Several variables were employed to examine the performance of the selected NBFIs, such as total capital, debt to total capital, debt to equity, capital adequacy ratio, total deposits, total loans, loan/deposit ratio, return on deposits, net interest margin, bad debts, ROI, ROA, ROC, net income, etc. Statistical measures like trend equations, R-squared, and correlation matrices were used to analyze the data. To estimate the implications of NBFIs in Bangladesh's financial sector, nine hypotheses were also tested. Seventeen different significant NBIF variables were tested using 85 trend equations and R-squared values. Their steadily rising net income, ROE, and ROA over time indicate their financial stability. NBFIs face difficulties due to restricted regulation, inefficient credit, and a lack of digital transformation. It is anticipated that the study's correlation matrix and trend analysis results will guide the selected NBFIs in Bangladesh to improve their performance. The employed methods should focus on good governance, innovation, and technology integration. This approach will not only strengthen NBFI growth but also contribute to the overall economic landscape of Bangladesh.

Contribution/ Originality: This study uniquely examines different variables, statistical measures, and hypotheses to analyze the trends and implications of selected NBIFs in Bangladesh. This study is among the few that investigate the performance of NBFIs. Our approach emphasizes the importance of proper governance, innovation, and technology integration in Bangladeshi NBFIs.

1. INTRODUCTION

Non-bank financial institutions (NBFIs) are becoming increasingly popular as financial entities rather than traditional banks and represent an emerging sector in Bangladesh's economy. These institutions provide financial services similar to those of banks, and sometimes even extend beyond, without holding a banking license. Although engaged in activities such as leasing, housing finance, investment, financial advisory, SME support, and asset management, NBFIs do not offer certain traditional banking services, such as demand deposits. In the formal financial services sector, NBFIs contribute significantly to financial inclusion across the economy. Although NBFIs were first established in Bangladesh in 1981, the industry has experienced remarkable growth, both in absolute and relative terms, with 30 NBFIs currently operating in the country (Bangladesh Bank, 2024).

According to Rahman, Khaled Rahman, and Ahmed (2023), the primary focus of NBFIs is on under-banked segments or gaps that the banking sector cannot cover due to regulatory constraints, such as SMEs, rural populations, industrial development, housing finance, microloans, and microfinance. However, NBFIs have been increasingly concentrating on the trade and commerce sector to enhance their profitable portfolios. This is evidenced by the fact that more than 76% of NBFI loans have been disbursed for commercial and industrial purposes. Ownership of NBFIs in Bangladesh is held by a combination of domestic and international investors, comprising government-owned, privately held, and joint venture companies.

NBFIs face significant challenges due to regulatory restrictions that prevent them from accepting public deposits, thereby limiting their ability to raise funds. Additionally, these legislative restrictions have inadvertently created direct competition between NBFIs and traditional banks, alongside other fundamental issues such as inadequate governance, lack of transparency, and a rising number of non-performing loans. Following the recent revision of the Finance Companies Act 2023, NBFIs are now overseen by Bangladesh Bank to ensure regulatory compliance, prevent issues like non-performing loans (NPLs), and enhance organizational transparency and risk management.

By filling the gaps in the traditional banking industry, NBFIs are boosting financial services in Bangladesh, contributing to a healthy financial ecosystem, and supporting the acceleration of the national economy. As of December 2023, there are 35 NBFIs, of which 3 are state-owned, 19 are private companies, and 13 are joint ventures with foreign participation. However, the public remains less familiar with the non-banking sector compared to BFIs, which has hindered the industry's expansion. In the first three quarters of 2024, only 4 NBFIs in Bangladesh have managed to be profitable due to decreasing non-performing loans (NPLs), operational efficiency, and improved investment income. Additionally, another report indicates that the overall NBFI industry experienced a significant rise in defaulted loans, totaling over 31 billion in the first half of 2024. This trend is concerning for the industry. Despite numerous challenges such as competition and regulatory hurdles, Bangladesh's NBFIs are improving the quality of financial services and overcoming obstacles. Besides BFIs, this sector supports financial inclusion and the sustainable growth of Bangladesh's emerging economy.

2. REVIEW OF LITERATURE

The study of Ahmed, Rahman, and Rahman (2023) revealed that in Bangladesh the NBFI business, competition is fierce due to the growing number of commercial banks and fierce competition can enhance the operational efficiency of the financial industry. In another study Islam and Tuhin (2022) portraits that bad investment choices have thrown the Investment Corporation of Bangladesh (ICB) into disarray. With some Tk.668 crore in deposits along with about Tk.100 crore in interest getting stuck with 10 non-bank financial institutions (NBFIs) even upon their maturity, the statutory corporation has now turned to the Bangladesh Bank for help.

Jahid (2024) demonstrated that few non-banks financial institutions successfully tamed NPL where on average of NPL is over 33% as of June, 2024. These few NBFI companies have adopted different strategies such as appointing experts, careful selection of borrowers, effective risk management, and employee training to reduce risk and promote financial stability.

Ahmed (2022) states that, according to Bangladesh Bank, 56.2 percent of all deposits in NBFIs were between Tk.1 crore and Tk.50 crore. Moreover, only 5,019 depositors across the entire NBFI sector were responsible for these deposits. In terms of loans, 60.6 percent of total funds were distributed among only 6,587 borrowers. For instance, in 2019, People's Leasing and Financial Services (PLFS), a non-bank financial institution, narrowly avoided liquidation due to an order from the High Court, which ignored a plea from the central bank. Previously, the Government of Bangladesh had ordered the central bank to liquidate the NBFI sector due to deteriorating financial performance over extended periods. Additionally, in 2021, Bangladesh Bank declared that 13 out of the 34 NBFIs operating in Bangladesh had slipped into the red zone by the end of 2020. The number was 10 in 2019.

Uddin (2024) argued that the NBFIs are currently held hostage by large debtors. They understand that financial institutions rely on them for both lending and borrowing. As a result, debtors tend to take out multiple different loans from different financial institutions at different times. For instance, if they must repay their loans at a bank, they will take out another large loan from an NBFI to repay the other one. All of these factors together expose these institutions to risks.

Lalon and Hussain (2017) have investigated on the Lanka Bangla Finance Limited (LBFL), one of the famous NBFI in Bangladesh. They used 17 financial ratios and found that effective asset management and best use of financial resources to meet liabilities are responsible for LBFL's performance. The study of Hossain and Shahiduzzaman (2002) explores that the requirement for effective long-term loans especially structured lease financing has evolved the path of NBFIs in Bangladesh. The study also identified several difficulties faced by NBFIs in achieving success. One of these is inadequate institutional support, as only seven of them are listed on the stock market. Another challenge is the high cost of funds, which makes the sector less efficient than banks, as banks can access relatively low-cost funds through their diversified activities. By using CAMELs model, Akter, Ahmad, and Islam (2018) analyzed the performance of NBFIs in Bangladesh. They run some ratio analysis to get a clear picture of capital adequacy, asset quality, management efficiency and how market risk impacts NBFIs in Bangladesh. Akber and Barua (2021) compared the business operations of nine NBFIs in Bangladesh. They conducted a number of ratio analyses, including ROA, ROE, ROCE, institutional size/total assets, and total equity. They discovered that, in terms of return generation, the efficiency ratio of NBFIs differs from the liquidity ratio, capital ratio, and other financial indicators. Additionally, this industry has room to expand and can make a substantial contribution to Bangladesh's economic growth.

Isayev, Irani, and Attarzadeh (2024) have investigated that the impact of monetary policy on non-bank financial institutions is not only bound to NBFI's conditional mean distribution but also indicate the significance of Basel III requirements. In another study, Alam and Islam (2022) have shown in that the Basel III implementation in the NBFIs can be a solution for the institutes to be vibrant. According to the study, because of the need to maintain a higher capital level, the industry may sometimes incur higher opportunity costs. The study also criticizes the one-digit interest rate, as it may reduce the operational profitability of banks and NBFIs. Basel III implications and maintaining appropriate compliance can help the industry grow positively.

Sarkar (2022) argued that NBFIs' performance can be affected by capital adequacy and leverage. He measured that capital adequacy has a positive impact on NBFI profitability in Bangladesh, whereas leverage influence conflicts with NBFI performance, using panel data from 23 NBFIs in Bangladesh from 2009 to 2019.

Babul and Far (2024) stated that out of 16 NBFIs in Bangladesh, only 4 are profit-making companies as of January-September 2024. Maintaining low NPLs, efficient operations, and adopting appropriate strategies to increase income are reasons for their strong financial performance. Alam and Mahmud (2015) investigated the performance trends of NBFIs using various determinants. The analysis shows that, despite challenges, NBFIs are performing positively and reducing financial market gaps with specialized financial products. According to this report, the industry is developing, as evidenced by the total investment in this sector, which was 550 million in 2009 and increased to 1,356 million in 2014. One of the primary causes of declining profitability is the rising expenses associated with borrowing capital.

Aziz (2024) conducted a study that showed the NBFIs of Bangladesh operate most of their functions in the money market and serve as auxiliary services to traditional banks. Although equity is the primary source of funds for the NBFIs, deposits are the main source of funding. As a highly regulated industry, NBFIs must collect funds from various deposit and non-deposit sources to maintain the necessary capital and liquidity reserves.

Another study by Imtiaz, Mahmud, and Faisal (2019) has demonstrated several elements that can impact the profitability of NBFIs. The non-performing loan rate for the NBFIs is one of the major concerns. Furthermore, this study also illustrates that, as the impact of the capital adequacy ratio is negative on the profitability ratio, NBFIs must

convert their equity capital into revenue-generating assets so that the negative impact on profitability can be mitigated. A key prerequisite for NBFIs' efficiency is meeting the proper liquidity requirements, which call for adequate cash flow and proper adherence to compliance standards.

Khowaja, Talpur, Soomro, and Khan (2021) conducted a study on Pakistan's economy to observe how NBFIs contribute to its economic development such as SMEs and the agriculture sector. They analyzed data from 2010 to 2018 and found that NBFIs hold a significant opportunity to contribute to Pakistan's economic growth if policy and financial reforms are improved. In another study, Travkina, Ternovskaya, and Fiapshev (2022) demonstrated that mobilizing national savings and promoting economic growth in Russia require the involvement of non-bank financial institutions (NBFIs). Using various methods, the study found that poor regulatory practices and an unstable development environment in this sector pose challenges for NBFIs to effectively support economic growth and development. Javadekar and Bhardwaj (2024) discovered that modifications to the lending regulations of Indian banks concerning systemically important NBFIs result in changes to credit distribution. Specifically, banks have started to prefer NBFIs over non-financial companies when it comes to lending, which adversely affects businesses and credit availability. According to Aramonte, Schrimpf, and Shin (2023), NBFIs have grown to be a crucial component of the modern financial system. During the pandemic, NBFIs showed their contribution in both demand and supply for liquidity. The rules and regulations must be monitored in order to reduce the risk that NBFIs pose to the financial system.

2.1. Objectives of the Study

The study aims to analyze the trends and implications of non-bank financial institutions (NBFIs) in the Bangladeshi financial sector. The specific objectives of the study are as follows:

- To evaluate the performance and trends of selected non-bank financial institutions (NBFIs) in the financial sector of Bangladesh.
- To suggest actions for the development and growth of selected non-bank financial institutions (NBFIs) in Bangladesh.

3. MATERIALS AND METHODS OF STUDY

The present study has been conducted to analyze the performance of selected Non-Bank Financial Institutions (NBFIs) in Bangladesh. The NBFIs include IDLC Finance Limited (IDLCFL), IPDC Finance Limited (IPDCFL), Lanka Bangla Finance Limited (LBFL), United Finance Limited (UFIL), and Bangladesh Finance Limited (BFL). The analysis primarily relies on data from secondary sources. Relevant data and information were collected from selected NBFIs in Bangladesh, stock exchanges, Bangladesh Bank, Securities and Exchange Commission, among others. Additionally, relevant articles and literature were reviewed. This study analyzes seven years of data (2015-2021) for NBFIs in Bangladesh. To evaluate the performance of these NBFIs, various statistical measures were used, such as growth percentage, trend equations, the square of the correlation coefficient, and the correlation matrix. The study aims to identify trend equations and growth percentages from the available data to assess the current situation, trends, and prospects of the selected NBFIs. The model's strength is determined by computing the square of the correlation coefficient (r^2). Furthermore, nine hypotheses were developed to estimate the implications of NBFIs in Bangladesh's financial sector.

An effort is made to find out the trend equations and growth percentages from the available data with a view to evaluating the existing situation and future prospects of Non-Bank Financial Institutions (NBFIs) of Bangladesh. Among the various straight-line trend methods of time series analysis, the method of least squares is the most popular and widely used in practice. The method of least squares can be used either to fit a straight-line trend or a parabolic trend. The straight-line trend is represented by the equation.

$$Yc = a + bX$$

Where, Yc = Trend values to distinguish them from the actual Y values.

a = Y intercept or the value of the Y variable when X = 0.

b = Slope of the line of the amount of change in Y variable that if associated with a change of one unit in X variable

X = Variable in time series analysis representing time.

The square of the correlation coefficient (r^2) is called the multiple determination coefficient or squared multiple correlation coefficient. The correlation coefficient is denoted by r. Its value ranges between 0 and 1. The higher the r^2, the greater the percentage of variation in Y explained by the regression model, indicating a better "goodness of fit" of the model to the sample observations. An r^2 closer to zero suggests a poorer fit.

A simple correlation coefficient among all the variables is shown by the correlation matrix. The correlation matrix is calculated for all selected NBFIs in Bangladesh. The following ten independent variables are chosen to calculate the Pearson correlation matrix for the NBFIs.

TL = Total Loans Advances,
ROA = Return on Assets,
ROE = Return on Equity
NI = Net Income
NB = Number of Branches
ROD= Return on Deposit
NIM= Net Interest Margin
DDB= Doubtful Debts
BDB= Bad Debts
ROI = Return on Investment

The present paper is organized as follows: Section one includes the introduction, literature review, and objectives of the study; section two details the materials and methods; section three highlights the results and discussion of the findings, including trend equations, R-squared, hypothesis testing, and the correlation matrix; section four provides policy implications and conclusions.

4. RESULT AND DISCUSSION

This segment assesses the performance of five NBIFs in Bangladesh. We attempted to investigate the trends and performance of NBIFs in Bangladesh's economy through various variables mentioned in the study's methods.

4.1. Empirical Results

This segment assesses the performance of five selected NBIFs in Bangladesh through twenty-three significant NBIF variables and analyzes nine hypotheses to evaluate their performance.

Table 1. Total number of branches of selected NBIFs in Bangladesh of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLC Finance Limited (IDLCFL)	31	32	30	30	30	30	30
Growth%	-	3.23%	-6.25%	0.00%	0.00%	0.00%	0.00%
IPDC Finance Limited (IPDCFL)	5	9	12	12	12	12	15
Growth%	-	80.00%	33.33%	0.00%	0.00%	0.00%	25.00%
LankaBangla Finance Limited (LBFL)	14	20	25	27	27	27	27
Growth%	-	42.86%	25.00%	8.00%	0.00%	0.00%	0.00%
United Finance Limited (UFL)	19	19	21	24	24	24	24
Growth%	-	0.00%	10.53%	14.29%	0.00%	0.00%	0.00%
Bangladesh Finance Limited (BFL)	5	5	6	7	7	7	7
Growth%	-	0.00%	20.00%	16.67%	0.00%	0.00%	0.00%
Branches	IDLC Finance Limited (IDLCFL)				Y = -0.25x + 534.93		R^2 = 0.4712
	IPDC Finance Limited (IPDCFL)				y= 1.2857x - 2583.6		R^2 = 0.7714
	LankaBangla Finance Limited (LBFL)				Y = 1.9643x - 3940.1		R^2 = 0.7068
	United Finance Limited (UFL)				Y = x - 1995.9		R^2 = 0.8033
	Bangladesh Finance Limited (BFL)				Y = 0.3929x - 786.5		R^2 = 0.7961

Table 1 shows the number of branches operated by selected NBFIs in Bangladesh. It is reflected that the number of branches of IDLC Finance Limited decreased from the previous year in 2016 and 2017 and remained stagnant from 2018 to 2021. The branches of IPDC Finance Limited increased in 2016, 2017, and 2021 and remained stagnant from 2018 to 2020. Branches of Lanka Bangla Finance Limited increased during the period of 2016 to 2018 and remained unchanged from 2019 to 2021. The branches of United Finance Limited increased from the previous year in 2017 and 2018 and maintained a similar pace from 2019 to 2021. The branches of Bangladesh Finance Limited increased from the previous year in 2017 and 2018 and remained the same from 2019 to 2021. The trend equations of the number of branches of all the selected NBFIs showed positive trends, and the R-squared of all the NBFIs except IDLC Finance Limited is greater than 0.70, indicating that the goodness of fit of the equations is very high. The table shows that all the equations are positive, and the fit of all the equations is very high, as it is more than 0.70.

Table 2. Total capital (Paid up) of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	2,514	2,514	3,771	3,771	3,771	3,771	3,959
Growth%		0.00%	50.00%	0.00%	0.00%	0.00%	4.99%
IPDCFL	1,263	1,515	1,818	2,182	3,534	3,711	3,711
Growth%		20.00%	20.00%	20.02%	61.96%	5.01%	0.00%
LBFL	2,406	2,767	3,183	5,132	5,132	5,388	5,388
Growth%		15.00%	15.03%	61.23%	0.00%	4.99%	0.00%
UFL	1,543	1,697	1,782	1,871	1,871	1,871	1,871
Growth%		10.00%	5.00%	5.00%	0.00%	0.00%	0.00%
BFL	1,144.24	1,258.67	1,384.54	1,523.00	1,675.30	1,675.30	1,775.81
Growth%		10.00%	10.00%	10.00%	10.00%	0.00%	6.00%
Total capital	IDLCFL	Y = 244.61x + 2460.3	R^2 = 0.6916				
	IPDCFL	Y = 480.48x + 611.43	R^2 = 0.9153				
	LBFL	Y = 576.32x + 1894.1	R^2 = 0.8559				
	UFL	Y = 50.779x + 1583.6	R^2 = 0.752				
	BFL	Y = 107.81x + 1059.7	R^2 = 0.9697				

Table 2 shows the growth pattern of the total capital of selected NBFIs. The capitals of IPDCFL, LBFL, and BFL have increased every year from 2015 to 2019. The capital of UFL increased compared to previous years during 2015 to 2019, and the capital of IDLCFL increased from the previous year in 2017 and 2019.

The trend equation regarding the capital of all the selected NBFIs shows positive trends, and the R-squared value for all the NBFIs is greater than 0.69, indicating a high goodness of fit for the equations. The table demonstrates that all the equations are positive, and the goodness of fit for all the equations is very high, as it exceeds 0.69.

Table 3. Debt to total capital of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	91%	90%	89%	90%	90%	90%	90%
Growth%		-1%	-2%	1%	1%	0%	0%
IPDCFL	70%	88%	92%	93%	91%	92%	93%
Growth%		26%	5%	1%	-1%	1%	1%
LBFL	88%	89%	89%	87%	87%	86%	87%
Growth%		2%	0%	-2%	0%	-1%	0%
UFL	86%	86%	87%	87%	85%	85%	87%
Growth%		0%	2%	0%	-2%	0%	3%
BFL	89%	89%	88%	86%	84%	82%	83%
Growth%		-1%	0%	-2%	-3%	-2%	1%
Debt to total capital	IDLCFL	Y = 0.0021x + 0.8911	R^2 = 0.3225				
	IPDCFL	Y = 0.0065x + 0.8911	R^2 = 0.4286				
	LBFL	Y = -0.006x + 0.8976	R^2 = 0.8916				
	UFL	Y = 1E-05x + 0.8637	R^2 = 0.000003				
	BFL	Y = -0.0139x + 0.9034	R^2 = 0.9139				

Table 3 illustrates the pattern of debt to total capital among selected NBFIs. IPDC has utilized more than 70 percent debt from 2017 to 2021. BFL, UFL, and LBFL have maintained approximately 86 percent debt nearly every year from 2015 to 2021. IDLC has had a 90 percent debt-to-total-capital ratio from 2015 to 2021, indicating a very high dependence on debt capital.

The trend equation regarding debt to total capital of all the selected NBFIs has shown positive trends, and the R-squared of LBFL and BFL is greater than 0.8, indicating that the goodness of fit of these equations is very high. It is also reflected in the table that the R-squared of IDLCFL and IPDCFL are 0.3225 and 0.4286, showing a lower goodness of fit. The goodness of fit of the trend equation for UFL is 0.000003, which is very poor.

Table 4. Debt to equity of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	9.65	9.06	7.76	8.54	9.21	9.19	9.42
Growth%		-6.14%	-14.32%	9.98%	7.87%	-0.24%	2.52%
IPDCFL	2.31	7.14	11.63	12.46	10.55	11.53	12.38
Growth%		208.29%	62.97%	7.17%	-15.35%	9.29%	7.33%
LBFL	7.17	8.34	8.01	6.93	6.9	6.35	6.45
Growth%		16.26%	-3.89%	-13.55%	-0.36%	-7.99%	1.59%
UFL	6.18	6.05	6.93	6.72	5.84	5.74	6.99
Growth%		-2.13%	14.54%	-3.00%	-13.07%	-1.79%	21.90%
BFL	8.46	7.87	7.56	6.33	5.26	4.69	4.87
Growth%		-7.02%	-3.93%	-16.29%	-16.91%	-10.87%	3.89%
Debt to equity	IDLCFL	Y = 0.0355x + 8.833	R^2= 0.0146				
	IPDCFL	Y = 1.3533x + 4.3007	R^2 = 0.6126				
	LBFL	Y = -0.2587x + 8.2012	R^2 = 0.5525				
	UFL	Y = 0.0261x + 6.2437	R^2 = 0.0116				
	BFL	Y = -0.6947x + 9.212	R^2 = 0.9421				

Table 4 shows the pattern of debt to equity of selected NBFIs. IPDC has used debt more than 10 times during 2017 to 2021. IDLCFL has used debt to equity more than 8 times during 2015 to 2021, except 2017. BFL and UFL have used about 5 times debt to total equity during 2015 to 2021, and LBFL used about 7 times debt. The debt to equity ratio of the selected NBFIs is lower than 10 times during 2015 to 2021, except for IDLCFL, which indicates a very high dependency on debt capital among the selected NBFIs.

The trend equations regarding debt equity of all the selected NBFIs have shown positive trends. The R-squared values of IPDCFL, LBFL, and BFL are greater than 0.5525, indicating that the goodness of fit of these equations is high. This is also reflected in the table, where the R-squared values of IDLCFL and UFL are closer to 0.15, showing a lower goodness of fit for the trend equations.

Table 5. Return on equity (ROE) of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	20.39%	21.29%	21.15%	16.55%	12.29%	17.37%	13.21%
Growth%		4.41%	-0.66%	-21.75%	-25.74%	41.33%	-23.95%
IPDCFL	9.71%	10.92%	10.78%	11.99%	10.09%	12.10%	14.20%
Growth%		12.46%	-1.28%	11.22%	-15.85%	19.92%	17.36%
LBFL	20.38%	18.44%	20.13%	7.44%	7.23%	8.07%	5.66%
Growth%		-9.52%	9.16%	-63.04%	-2.82%	11.62%	-29.86%
UFL	12.72%	10.67%	8.60%	9.01%	7.77%	6.62%	6.90%
Growth%		-16.12%	-19.40%	4.77%	-13.76%	-14.80%	4.23%
BFL	9.73%	7.75%	10.43%	12.30%	8.72%	10.97%	10.55%
Growth%		-20.35%	34.58%	17.93%	-29.11%	25.80%	-3.83%
Return on equity	IDLCFL		Y = -0.0137X + 0.2293		R^2 = 0.633		
	IPDCFL		Y = 0.0054X + 0.0924		R^2 = 0.5904		
	LBFL		Y = -0.0278X + 0.2359		R^2 = 0.785		
	UFL		Y = -0.0094X + 0.1267		R^2 = 0.8788		
	BFL		Y = 0.0026X + 0.0904		R^2 = 0.1371		

Table 5 shows the return on equity (ROE) of selected NBFIs. IDLCFL has earned the highest return on equity (ROE). From 2015 to 2021, IDLC's ROE exceeded 15 percent each year, except for 2019 and 2021. During the same period, LBFL, UFL, and BFL maintained ROE above 5 percent annually. This indicates that all the selected NBFIs consistently earned positive ROE from 2015 to 2021.

The trend equations regarding the return on capital (ROE) of all the selected NBFIs have shown positive trends. Except for BFL, the R-squared of all the selected NBFIs is greater than 0.5904, indicating that the goodness of fit of these equations is very high. It is also reflected in the table that the R-squared of BFL, which is closer to 0.14, shows a lower goodness of fit of the trend equations.

Table 6. Return on total capital (ROC) of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	90.53%	102.67%	69.98%	64.33%	63.38%	86.24%	69.29%
Growth%		13.40%	-31.84%	-8.07%	-1.48%	36.07%	-19.66%
IPDCFL	27.26%	30.89%	28.26%	39.46%	28.13%	32.36%	40.50%
Growth%		13.31%	-8.53%	39.65%	-28.72%	15.06%	25.15%
LBFL	43.47%	2.37%	2.26%	15.90%	16.68%	17.04%	12.99%
Growth%		-94.55%	-4.71%	604.68%	4.90%	2.15%	-23.75%
UFL	33.90%	27.58%	22.90%	25.28%	20.58%	14.54%	13.90%
Growth%		-18.65%	-16.97%	10.41%	-18.60%	-29.35%	-4.41%
BFL	25.58%	21.76%	25.89%	27.38%	24.27%	26.93%	29.48%
Growth%		-14.94%	18.99%	5.73%	-11.36%	10.96%	9.46%
Return on total capital	IDLCFL		Y = -0.0369x + 0.928		R^2 = 0.2768		
	IPDCFL		Y = 0.0152x + 0.2633		R^2 = 0.3598		
	LBFL		Y = -0.017x + 0.2263		R^2 = 0.0712		
	UFL		Y = -0.0316x + 0.3529		R^2 = 0.9166		
	BFL		Y = 0.0073x + 0.2299		R^2 = 0.4133		

Table 6 shows the return on total capital (ROC) of selected NBFIs. IDLCFL has earned the highest return on equity (ROE). From 2015 to 2021, IDLCFL's ROC was above 65 percent each year. During the same period, LBFL, UFL, and BFL's ROC exceeded 25 percent annually. Additionally, from 2018 to 2020, LBFL's ROC was above 15 percent each year. This indicates that all the selected NBFIs consistently achieved a very high ROC throughout 2015 to 2021.

The trend equations regarding the return on capital (ROC) of all the selected NBFIs have shown positive trends. The R-squared value of UFL is 0.9166, indicating that the goodness of fit of the equations is very high. The R-squared values of IPDCFL and BFL are greater than 0.36, which indicates a moderate goodness of fit. It is also reflected in the table that the R-squared value of IDLCFL is 0.2768, suggesting a lower goodness of fit of the trend equations.

Table 7. Capital adequacy ratio (CAR) of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	14.80%	13.25%	15.30%	15.47%	14.82%	14.59%	15.27%
Growth%		-10.47%	15.47%	1.11%	-4.20%	-1.55%	4.66%
IPDCFL	49.15%	22.09%	15.14%	14.01%	19.30%	18.51%	15.65%
Growth%		-55.06%	-31.46%	-7.46%	37.76%	-4.09%	-15.45%
LBFL	13.41%	12.45%	11.95%	16.18%	16.75%	18.76%	16.89%
Growth%		-7.16%	-4.02%	35.40%	3.52%	12.00%	-9.97%
UFL	18.69%	18.92%	17.16%	16.33%	18.17%	18.14%	18.49%
Growth%		1.23%	-9.30%	-4.84%	11.27%	-0.17%	1.93%
BFL	12.56%	13.29%	13.56%	13.17%	15.53%	16.60%	18.30%
Growth%		5.81%	2.03%	-2.88%	17.92%	6.89%	10.24%
Capital adequacy ratio	IDLCFL		Y = 0.0013x + 0.1427		R^2 = 0.1383		
	IPDCFL		Y = -0.037x + 0.3676		R^2 = 0.4214		
	LBFL		Y = 0.01x + 0.1122		R^2 = 0.6892		
	UFL		Y = -0.0004x + 0.1815		R^2 = 0.0093		
	BFL		Y = 0.0092x + 0.1103		R^2 = 0.8662		

Table 7 shows the capital adequacy ratio (CAR) of selected NBFIs. All the selected NBFIs have maintained a capital adequacy ratio (CAR) of more than 15 percent in most of the years from 2015 to 2021. UFL has maintained a CAR of more than 18 percent throughout this period. This indicates that all the selected NBFIs have maintained a strong CAR from 2015 to 2021. The trend equations regarding the CAR of all the selected NBFIs have shown positive trends. The R Square of LBFL and BFL is more than 0.6892, indicating that the goodness of fit of the equations is very high. The R Square of IPDCFL is greater than 0.42, reflecting a moderate goodness of fit. It is also evident from the table that the R Square of UFL is 0.0093, indicating a low goodness of fit for the trend equation.

Table 8. Total deposits of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	47,760	49,413	62,777	73,793	79,499	80,622	76,331
Growth%		3.46%	27.05%	17.55%	7.73%	1.41%	-5.32%
IPDCFL	4,545	17,179	29,747	37,066	46,361	52,456	60,405
Growth%		277.98%	73.16%	24.60%	25.08%	13.15%	15.15%
LBFL	30,196	40,148	51,675	53,405	46,751	47,428	48,006
Growth%		32.96%	28.71%	3.35%	-12.46%	1.45%	1.22%
UFL	11,468	12,570	15,061	14,548	11,822	11,876.67	13,312.01
Growth%		9.61%	19.81%	-3.40%	-18.74%	0.46%	12.09%
BFL	9,225.49	8,589.37	10,192.10	9,579.21	8,837.06	8,616.44	9568.98
Growth%		-6.90%	18.66%	-6.01%	-7.75%	-2.50%	11.05%
Total deposits	IDLCFL			Y = 5887.6x + 43620		R^2 = 0.8281	
	IPDCFL			Y = 9098.1x - 998.43		R^2 = 0.9841	
	LBFL			Y = 2252.4x + 36363		R^2 = 0.3789	
	UFL			Y = 32.408x + 12821		R^2 = 0.0025	
	BFL			Y = -9.6582x + 9268.4		R^2 = 0.0012	

Table 8 shows the growth of deposits of selected NBFIS. The table shows that IPDC's deposit has the highest average growth rate. However, IDLC has the highest number of deposits among the selected NBFIs. The deposits of different NBFIs have increased almost every year during 2015 to 2021, except BFL. This indicates that the NBFIs have improved financial sustainability because deposits are cost-efficient. On the other hand, having large deposits can expose the NBFIs to failure risk, because these financial claims from the public are often volatile. As a result, NBFIs need to stand ready, or they must have enough liquidity to meet deposit withdrawals. The trend equation regarding total deposits of all the selected NBFIs shows positive trends. The R-squared values for IDLCFL and IPDCFL are greater than 0.82, indicating a high goodness of fit for these equations. The table also reflects that the R-squared value for LBFL is 0.38, while the R-squared values for UFL and BFL are very low, indicating a lower goodness of fit. Due to fluctuations in the deposits of UFL and BFL, their R-squared values are low, reflecting less reliable models. Therefore, both UFL and BFL should work to improve their deposit collection strategies.

Table 9. Total loan of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	53,858	61,136	70,666	82,410	91,448	91,853	89,262
Growth%		13.51%	15.59%	16.62%	10.97%	0.44%	-2.82%
IPDCFL	6,416	19,481	34,467	44,325	50,726	53,610	65,327
Growth%		203.63%	76.93%	28.60%	14.44%	5.69%	21.86%
LBFL	4,181	46,749	61,914	63,785	60,662	54,709.35	58,775.03
Growth%		1018.13%	32.44%	3.02%	-4.89%	-9.81%	7.43%
UFL	11,939	13,803	16,960	17,942	14,989	15136.21	17228.27
Growth%		15.61%	22.87%	5.79%	-16.46%	0.98%	13.82%
BFL	13,282	13,892	14,226	13,862	13,367	12,873	13,692
Growth%		4.59%	2.41%	-2.56%	-3.57%	-3.69%	6.36%
Total loan	IDLCFL		Y = 6729.6x + 50315			R^2 = 0.8831	
	IPDCFL		Y = 9330.4x + 1871.7			R^2 = 0.9614	
	LBFL		Y = 6373.3x + 24618			R^2 = 0.4284	
	UFL		Y = 591.54x + 13062			R^2 = 0.3629	
	BFL		Y = -59.496x + 13837			R^2 = 0.0801	

Table 9 showed the total loans of selected NBFIS of Bangladesh. It is reflected from the table that almost every year loans of selected NBFIS of Bangladesh has increased from the previous year. The growth of loan is more than 10% in IPDCFL. The lowest growth observed in BFL was during 2017 to 2020, leading to negative growth.

The trend equation regarding total loans of all the selected NBFIs has shown positive trends. The R-squared values of IDLCFL and IPDCFL are greater than 0.88, indicating that the goodness of fit of these equations is very high. It is also evident from the table that the R-squared value of LBFL is 0.4284, and the R-squared values of UFL and BFL are very low, reflecting a lower goodness of fit. Due to fluctuations in loan disbursements of UFL and BFL, their R-squared values are low, indicating a lower goodness of fit. Therefore, both NBFIs should aim to improve their deposit mobilization and loan disbursement strategies.

Table 10. Loan/Deposit of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	113%	124%	113%	112%	115%	114%	117%
Growth%		9.72%	-9.02%	-0.79%	3.00%	-0.96%	2.64%
IPDCFL	141%	113%	116%	120%	109%	102%	108%
Growth%		-19.67%	2.18%	3.21%	-8.50%	-6.59%	5.82%
LBFL	120%	117%	120%	120%	130%	115%	122%
Growth%		-2.47%	2.84%	-0.26%	8.33%	-11.10%	6.14%
UFL	104%	110%	113%	123%	127%	127%	129%
Growth%		5.47%	2.55%	9.52%	2.80%	0.52%	1.55%
BFL	144%	162%	140%	145%	151%	149%	143%
Growth%		12.34%	-13.70%	3.67%	4.53%	-1.23%	-4.23%
Loan/deposit	IDLCFL	Y = 0.0017x + 0.2502			R² = 0.018		
	IPDCFL	Y = -0.006x + 0.5384			R² = 0.0705		
	LBFL	Y = -0.0025x + 0.794			R² = 0.0043		
	UFL	Y = 0.0125x + 0.9525			R² = 0.0045		
	BFL	Y = -0.0056x + 1.4991			R² = 0.027		

The growth patterns of the total loan-to-deposit ratio of selected NBFIs in Bangladesh are reflected in Table 10. It can be observed from the table that almost every year's loan/deposit ratio of NBFIS fluctuated compared to the previous year. The loan/deposit ratios of all selected NBFISs were above 100% during 2015-2020, indicating a high risk of liquidity crisis. Generally, the ideal loan/deposit ratio is between 80% and 90%. A loan/deposit ratio exceeding 100% means that NBFISs have loaned more than their deposits. This indicates that NBFISs have failed to maintain an acceptable loan/deposit ratio, which sends a negative signal regarding their development. Therefore, it is recommended that NBFISs reduce their loan/deposit ratio to a more acceptable level to minimize default risk.

Table 11. Return on deposit (ROD) of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	2.60%	3.03%	2.520%	2.16%	1.915%	2.73%	2.065%
Growth%		16.28%	-16.78%	-14.47%	-11.17%	42.82%	-24.49%
IPDCFL	5.28%	1.76%	1.13%	1.21%	1.21%	1.35%	1.46%
Growth%		-66.62%	-36.07%	7.67%	-0.07%	10.93%	8.37%
LBFL	3.42%	2.68%	2.62%	1.34%	1.57%	1.74%	1.27%
Growth%		-21.80%	-1.99%	-48.91%	17.42%	10.63%	-27.16%
UFL	2.99%	2.49%	1.70%	1.90%	2.07%	1.78%	1.67%
Growth%		-16.75%	-31.74%	12.01%	8.84%	-14.27%	-6.13%
BFL	1.75%	1.63%	2.95%	2.94%	2.16%	3.65%	3.38%
Growth%		-7.00%	80.54%	-0.06%	-26.71%	69.25%	-7.32%
Return on deposit	IDLCFL	Y= -0.001x + 0.0283			R² = 0.2929		
	IPDCFL	Y = -0.0044x + 0.0366			R² = 0.3952		
	LBFL	Y = -0.0034x + 0.0343			R² = 0.7804		
	UFL	Y = -0.0023x + 0.0267			R² = 0.345		
	BFL	Y = 0.0029x + 0.0148			R² = 0.6235		

The trend equation regarding the loan/deposit ratio of all the selected NBFIs shows positive trends. The R-squared value for all NBFIs is less than 0.10, indicating that the goodness of fit of these equations is poor. Due to fluctuations in the loan/deposit ratios of the selected NBFIs, the R-squared values are low and reflect a lower goodness of fit. Therefore, the NBFIs must try to maintain an acceptable loan/deposit ratio.

Table 11 shows the return on deposit (ROD) of selected NBFIs. IDLCFL has earned the highest return on deposit (ROD). From 2015 to 2021, IDLCFL's ROD was above 2 percent each year. During the same period, the selected NBFIs earned approximately 1.5 percent ROD annually. It appears that all the selected NBFIs earned very low ROD throughout 2015 to 2021.

The trend equations regarding the return on deposit (ROD) of all the selected NBFIs have shown positive trends. The R-squared values for LBFL and UFL are greater than 0.6235, indicating that the goodness of fit of the equations is very high. The R-squared values for UFL, IPDCFL, and BFL are greater than 0.34, indicating a moderate goodness of fit. It is also reflected in the table that the R-squared value for IDLCFL is closer to 0.2929, showing a lower goodness of fit for the trend equation.

Table 12. Net interest margin (NIM) of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	5.14%	4.92%	4.71%	4.18%	4.12%	3.74%	3.76%
Growth%		-4.21%	-4.43%	-11.22%	-1.48%	-9.07%	0.47%
IPDCFL	5.83%	4.35%	3.59%	3.93%	3.54%	3.01%	3.61%
Growth%		-25.43%	-17.36%	9.24%	-9.72%	-15.05%	19.74%
LBFL	4.43%	8.77%	6.34%	3.42%	3.76%	2.88%	2.48%
Growth%		97.91%	-27.69%	-46.06%	9.87%	-23.46%	-13.88%
UFL	4.79%	4.20%	3.59%	4.15%	4.29%	3.86%	3.88%
Growth%		-12.33%	-14.42%	15.61%	3.19%	-9.86%	0.57%
BFL	3.62%	3.05%	2.96%	2.96%	4.27%	3.53%	3.56%
Growth%		-15.66%	-2.98%	0.07%	44.33%	-17.35%	0.66%
Net interest margin	IDLCFL			$Y = -0.0025x + 0.0538$		$R^2 = 0.9558$	
	IPDCFL			$Y = -0.0034x + 0.0532$		$R^2 = 0.6335$	
	LBFL			$Y = -0.0072x + 0.0748$		$R^2 = 0.4869$	
	UFL			$Y = -0.001x + 0.0449$		$R^2 = 0.2932$	
	BFL			$Y = 0.0007x + 0.0312$		$R^2 = 0.1157$	

Table 12 illustrates the net interest margin (NIM) of selected NBFIs. IDLCFL has achieved the highest NIM. From 2015 to 2019, IDLCFL's NIM was consistently above 4 percent each year. Between 2015 and 2021, the selected NBFIs maintained an approximate NIM of 3 percent annually. Overall, the selected NBFIs have experienced low NIMs nearly every year during 2015 to 2021.

The trend equations regarding net interest margin (NIM) of all the selected NBFIs have shown negative trends, except for BFL's trend equations. The R Square values of IDLCFL, IPDCFL, and LBFL UFL are almost greater than 0.50, indicating that the goodness of fit of the equations is high. The R Square of UFL is 0.2932, and BFL's is 0.1157, indicating a moderate and lower goodness of fit of the trend equations.

It is observed from Table 13 that the total doubtful debts of IDLCFL and BFL have decreased almost every year compared to the previous year, but the doubtful debts of IPDCFL, LBFL, and UFL have increased from the previous years during 2015-2021. The total doubtful debts of LBFL and IPDCFL are very high. It appears that most of the selected NBFIs are unable to manage credit efficiently, resulting in unsatisfactory recovery during 2015 to 2021 for most of the selected NBFIs. Therefore, the NBFIs must try to minimize doubtful debts.

Table 13. Doubtful debt of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	478.66	302.16	217.098	343.56	651.01	466.04	441.11
Growth%		-36.87%	-28.15%	58.25%	89.49%	-28.41%	-5.35%
IPDCFL	1	4	3	37	433	421	568
Growth%		300.00%	-25.00%	1133.33%	1070.27%	-2.77%	34.92%
LBFL	34	36	100	119	421	819	658
Growth%		5.88%	177.78%	19.00%	253.78%	94.54%	-19.66%
UFL	57	57	73	90	100	93	66
Growth%		0.00%	28.07%	23.29%	11.11%	-7.00%	-29.03%
BFL	197	355	334	28	18	17	1
Growth%		80.20%	-5.92%	-91.62%	-35.71%	-5.56%	-94.12%
Doubtful debt	IDLCFL		Y = 23.179x + 321.52		R^2 = 0.1253		
	IPDCFL		Y = 105.89x - 214		R^2 = 0.8234		
	LBFL		Y = 134.25x - 224.57		R^2 = 0.8083		
	UFL		Y = 4.5x + 58.571		R^2 = 0.3		
	BFL		Y = -56.429x + 361.43		R^2 = 0.5989		

The trend equation regarding doubtful debts of three NBFIs has shown positive trends, while IPDCFL and BFL have shown negative trends. The R-squared values for IPDCFL and LBFL are greater than 0.80, indicating a strong fit. The R-squared value for BFL is 0.5989, which suggests a relatively high goodness of fit. It is also evident from the table that the R-squared values for IDLCFL and UFL are low, reflecting a lower goodness of fit. Due to fluctuations in the doubtful debts of IDLCFL and UFL, a lower R-squared value is observed.

Table 14. Bad debt of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	858.89	1084.26	1446.2	1024.79	1405.8	824.93	1292.15
Growth%		26.24%	33.38%	-29.14%	37.18%	-41.32%	56.64%
IPDCFL	91	80	214	80	86	203	833
Growth%		-12.09%	167.50%	-62.62%	7.50%	136.05%	310.34%
LBFL	756	1,077	1,188	1,287	1,537	1,639	2,623
Growth%		42.46%	10.31%	8.33%	19.43%	6.64%	60.04%
UFL	192	183	344	346	334	258	464
Growth%		-4.69%	87.98%	0.58%	-3.47%	-22.75%	79.84%
BFL	260	350	445	457	478	395	336
Growth%		34.62%	27.14%	2.70%	4.60%	-17.36%	-14.94%
Bad debt	IDLCFL		Y = 26.454x + 1028		R^2 = 0.0513		
	IPDCFL		Y = 83.714x - 108.14		R^2 = 0.4365		
	LBFL		Y = 252.64x + 433.29		R^2 = 0.8371		
	UFL		Y = 34.143x + 166.43		R^2 = 0.5518		
	BFL		Y = 12.536x + 338.57		R^2 = 0.1199		

Table 14 shows that the bad debts of the selected NBFIs have increased compared to the previous year, but the bad debt of BFL has decreased in 2020 and 2021 compared to the previous year. The bad debts of all the selected NBFLs have increased in 2021, except for BFL. The amount of bad debt is highest in LBFL. Over the past seven years, all the NBFIs have shown fluctuations in bad debt amounts; it has increased in some years and decreased in others.

The trend equation regarding bad debts of all the NBFIs has shown positive trends. The R-squared values for LBFL and UFL are greater than 0.55, and the R-squared value for IPDCFL is 0.44, indicating that the goodness of fit of these equations is high. It is also reflected in the table that the R-squared values for IDLCFL and BFL are low, which indicates a lower goodness of fit. The fluctuation of bad debts for IDLCFL and BFL shows a lower R-squared value.

Table 15. Return on investment (ROI)of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	2.39%	2.48%	2.30%	2.00%	1.70%	2.31%	1.67%
Growth%		3.77%	-7.26%	-13.04%	-15.00%	35.88%	-27.71%
IPDCFL	58.41%	53.57%	50.61%	51.80%	35.81%	12.12%	14.20%
Growth%		-8.29%	-5.53%	2.35%	-30.87%	-66.15%	17.16%
LBFL	2.42%	2.19%	2.08%	0.93%	0.96%	1.11%	0.80%
Growth%		-9.50%	-5.02%	-55.29%	3.23%	15.63%	-27.93%
UFL	42.17%	33.37%	21.70%	31.97%	34.03%	33.81%	27.85%
Growth%		-20.87%	-34.97%	47.33%	6.44%	-0.63%	-17.62%
BFL	14.90%	11.66%	26.71%	25.82%	23.65%	39.52%	32.81%
Growth%		-20.87%	-34.97%	47.33%	6.44%	-0.63%	-17.62%
Return on investment	IDLCFL		Y = -0.0011x + 0.0256		R^2 = 0.5167		
	IPDCFL		Y = -0.0823x + 0.7241		R^2 = 0.8483		
	LBFL		Y = -0.0029x + 0.0266		R^2 = 0.8111		
	UFL		Y = -0.0106x + 0.3638		R^2 = 0.1338		
	BFL		Y = 0.038x + 0.0981		R^2 = 0.7255		

Table 15 shows the return on investment (ROI) of selected NBFIs. IPDCFL has earned the highest return on investment (ROI). From 2015 to 2019, IPDCFL's ROI was over 35 percent each year. From 2015 to 2021, UFL earned approximately 25 percent ROI annually, except in 2017. Between 2017 and 2021, BFL consistently earned more than 25 percent ROI each year. It appears that, except for IDLCFL, all the selected NBFIs have achieved very high ROI nearly every year.

The trend equations regarding the return on investment (ROI) of all the selected NBFIs have shown positive trends. Except for UFL, all the selected NBFIs have R Square values greater than 0.52, indicating a high goodness of fit for the equations. The R Square value of UFL is 0.1338, indicating a lower goodness of fit for its trend equation.

Table 16. Return on assets (ROA) of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	1.93%	2.02%	1.87%	1.61%	1.38%	1.85%	1.21%
Growth%		4.66%	-7.43%	-13.90%	-14.29%	34.06%	-34.59%
IPDCFL	1.64%	0.72%	0.85%	0.89%	0.87%	1.00%	1.10%
Growth%		-56.10%	18.06%	4.71%	-2.25%	14.94%	10.00%
LBFL	2.68%	2.10%	1.99%	0.89%	0.91%	1.06%	0.76%
Growth%		-21.64%	-5.24%	-55.28%	2.25%	16.48%	-28.30%
UFL	1.95%	1.56%	1.15%	1.15%	1.07%	0.94%	0.98%
Growth%		-20.00%	-26.28%	0.00%	-6.96%	-12.15%	4.26%
BFL	1.06%	0.85%	1.20%	1.56%	1.33%	1.84%	1.82%
Growth%		-19.81%	41.18%	30.00%	-14.74%	38.35%	-1.09%
Return on assets	IDLCFL			Y = -0.0011x + 0.0212		R^2 = 0.5731	
	IPDCFL			Y = -0.0004x + 0.0116		R^2 = 0.0704	
	LBFL			Y = -0.0032x + 0.0276		R^2 = 0.8232	
	UFL			Y = -0.0015x + 0.0186		R^2 = 0.7917	
	BFL			Y = 0.0016x + 0.0075		R^2 = 0.8043	

Table 16 shows the return on assets (ROA) of selected NBFIs. IDLCFL has achieved the highest ROA. From 2015 to 2019, IDLCFL's ROA was consistently above 1.5 percent each year. BFL earned approximately 1.5 percent ROA annually during 2017 to 2021. During the same period, other selected NBFIs generally earned about 1.00 percent ROA each year. Overall, it appears that all the selected NBFIs have maintained a very low ROA throughout the years.

The trend equations regarding the ROA of all the selected NBFIs have shown negative trends, except for BFL. Except for IPDCFL, the R-squared values of all the selected NBFIs are greater than 0.57, indicating that the goodness

of fit of the equations is very high. The R-squared value of IPDCFL is 0.0704, indicating a lower goodness of fit for its trend equation.

Table 17. Net income of selected NBFIs.

Company name	2015	2016	2017	2018	2019	2020	2021
IDLCFL	1,243.82	1,496.41	1,582.04	1,590.65	1,522.19	2,204.74	1,576.20
Growth%		20.3%	5.7%	0.5%	-4.3%	44.8%	-28.5%
IPDCFL	240.19	303.01	335.43	450.00	562.47	706.00	881.00
Growth%	-	26.2%	10.7%	34.2%	25.0%	25.5%	24.8%
LBFL	1,030.00	1,072.00	1,353.00	714.00	736.00	826.00	609.00
Growth%	-	4.1%	26.2%	-47.2%	3.1%	12.2%	-26.3%
UFL	343.00	313.00	256.00	277.00	245.00	211.00	222.00
Growth%	-	-8.7%	-18.2%	8.2%	-11.6%	-13.9%	5.2%
BFL	161.82	140.12	209.78	277.22	218.26	226.00	268.00
Growth%	-	-13.4%	49.7%	32.1%	-21.3%	3.5%	18.6%
Net income	IDLCFL		Y = 84.07x + 1266			R^2 = 0.3878	
	IPDCFL		Y = 105.55x + 74.664			R^2 = 0.9531	
	LBFL		Y = -84.714x + 1244.6			R^2 = 0.4985	
	UFL		Y = -20.643x + 349.29			R^2 = 0.8673	
	BFL		Y = 17.814x + 143.2			R^2 = 0.5818	

Table 17 illustrates the growth of net income among selected NBFIS. The table indicates that IPDC has the highest average annual growth rate. From 2015 to 2021, the yearly growth rate was nearly 25 percent, except in 2017. However, IDLC reported the highest net income among the selected NBFIs. The net income of various NBFIs increased almost every year from 2015 to 2021, except for UFL and BFL. This suggests that the NBFIs have improved their financial sustainability, as they have earned substantial net income in nearly every year during this period.

The trend equations regarding the net income of IDLC, IPDC, and BFL have shown positive trends, while the trend equations of LBFL, UFL, and BFL have shown negative trends. The R-squared values for all selected NBFIs except IDLCFL are greater than 0.50, indicating a high goodness of fit for these equations. It is also reflected in the table that the R-squared value of IDLC is 0.3878, representing a moderate goodness of fit.

4.2. Results and Discussion on Summary Findings of NBIFs Activities

Results and findings of non-bank financial institutions' activities, a summary of the trend equations, and R2 are analyzed in this section.

- Table 1 indicates that over the seven-year period, the number of branches of the NBIFs has remained almost stagnant. NBIFs should expand their branches to reach more customers.
- Table 2 identifies that all the selected NBFIs' total capital (paid-up) has a positive growth pattern. These NBFIs should try to increase total capital.
- Table 3 shows the debt-to-total capital ratio of selected NBIFs. These NBFIs had more than 86% percent of their capital is on debt. They should reduce their dependency on debt capital.
- It can be observed from Table 4 that all five NBIFs have a very high debt-to-equity ratio. Hence, all selected NBIFs should try to reduce dependency on debt equity.
- Table 5 shows IDLCFL has the highest average growth rate in its ROE, whereas all other NBIFs have a fluctuating rate of ROE over the seven-year period. It was suggested that these NBIFs should try to improve their stable growth of ROE.
- It can be observed from Table 6 that all the selected NBIFs have earned a very high ROC over the seven-year period. They may try to maintain the trends.

- It is noticed from Table 7 that all selected NBFIs have maintained a good capital adequacy ratio throughout the period from 2015 to 2021.
- Table 8 identifies that IPDCFL has the highest average growth rate on deposits. The deposits of all selected NBIFs have increased except BFL. They should try to increase their deposits.
- Table 9 identifies that all the selected NBIFs' loans and advances have increased compared to the previous year, indicating growth during 2015-2021. However, BFL has the lowest growth rate.
- It is reflected in Table 10 that all the selected NBFIs' loans/deposits are more than 100% which is more than the ideal ratio. It is suggested that NBFIs should take necessary steps to minimize the loan deposit ratio within the accepted level.
- Table 11 shows the ROD of selected NBFIs, where IDLCFL has the highest ROD. For all the selected NBFIs ROD is very poor. Hence, NBFIs should focus on this area.
- It can be observed from Table 12that all the selected NBFIs don't have impressive NIM during the period of 2015-2021. Hence, NBFIs should try to increase NIM.
- It is noticed from Table 13that the total doubtful debts of IPDCFL, LBFL, and UFL were increasing. It seems most of the selected NBFIs are not able to maintain credit efficiency. Hence, the NBFIs must try to minimize doubtful debts.
- In Table 14, over the past seven years, all the NBFIs have shown fluctuation in bad debt amounts; it has increased in some years and decreased in some years. They should try to minimize the bad debts.
- In Table 15, all selected NBFIs have earned very high ROI every year except IDLCFL.
- Table 16 shows that all selected NBFIs have earned a very low ROA. Hence, NBFIs should increase the ROA.
- Table 17 shows that the net income of different NBFIs has increased almost every year from 2015 to 2021, except for UFL and BFL, indicating financial stability between 2015-2021.

4.3. Summary of Trend Equation and R-squared

The table presents twenty-one variables consisting of 120 components, with 105 components exhibiting a positive trend and 15 showing a negative trend. Regarding effect size, 66 components have R-squared values greater than 0.5, indicating a well-fitted trend equation, and 54 components have R-squared values less than 0.5, indicating a lower goodness of fit.

4.4. Correlation Matrix

In this section, we calculated the Pearson correlation of selected NBFIs with different variables.

Table 18. Pearson correlation.

Correlations											
Variables		**NI**	**NB**	**TDS**	**TL**	**ROD**	**NIM**	**DDB**	**BDB**	**ROI**	**ROA**
NI	Pearson correlation	1	0.695**	0.676**	0.859**	0.140	0.255	0.482**	0.571**	-0.697**	0.451**
	Sig. (1-tailed)		0.000	0.000	0.000	0.212	0.069	0.002	0.000	0.000	0.003
	N	35	35	35	35	35	35	35	35	35	35
NB	Pearson correlation	0.695**	1	0.648**	0.690**	-0.146	0.108	0.439**	0.654**	-0.610**	0.140
	Sig. (1-tailed)	0.000		0.000	0.000	0.201	0.268	0.004	0.000	0.000	0.212
	N	35	35	35	35	35	35	35	35	35	35
TDS	Pearson correlation	0.676**	0.648**	1	0.737**	-0.421**	0.019	0.497**	0.473**	-0.488**	0.016
	Sig. (1-tailed)	0.000	0.000		0.000	0.006	0.457	0.001	0.002	0.001	0.463
	N	35	35	35	35	35	35	35	35	35	35
TL	Pearson correlation	0.859**	0.690**	0.737**	1	-0.198	0.037	0.669**	0.656**	-0.647**	0.001
	Sig. (1-tailed)	0.000	0.000	0.000		0.127	0.416	0.000	0.000	0.000	0.498
	N	35	35	35	35	35	35	35	35	35	35
ROD	Pearson correlation	0.140	-0.146	-0.421**	-0.198	1	0.456**	-0.252	-0.059	0.037	0.684**
	Sig. (1-tailed)	0.212	0.201	0.006	0.127		0.003	0.072	0.369	0.415	0.000
	N	35	35	35	35	35	35	35	35	35	35
NIM	Pearson correlation	0.255	0.108	0.019	0.037	0.456**	1	-0.341*	-0.069	0.002	0.539**
	Sig. (1-tailed)	0.069	0.268	0.457	0.416	0.003		0.023	0.347	0.496	0.000
	N	35	35	35	35	35	35	35	35	35	35
DDB	Pearson correlation	0.482**	0.439**	0.497**	0.669**	-0.252	-0.341*	1	0.619**	-0.605**	-0.216
	Sig. (1-tailed)	0.002	0.004	0.001	0.000	0.072	0.023		0.000	0.000	0.106
	N	35	35	35	35	35	35	35	35	35	35
BDB	Pearson correlation	0.571**	0.654**	0.473**	0.656**	-0.059	-0.069	0.619**	1	-0.775**	0.076
	Sig. (1-tailed)	0.000	0.000	0.002	0.000	0.369	0.347	0.000		0.000	0.332
	N	35	35	35	35	35	35	35	35	35	35
ROI	Pearson correlation	-0.697**	-0.610**	-0.488**	-0.647**	0.037	0.002	-0.605**	-0.775**	1	-0.264
	Sig. (1-tailed)	0.000	0.000	0.001	0.000	0.415	0.496	0.000	0.000		0.063
	N	35	35	35	35	35	35	35	35	35	35
ROA	Pearson correlation	0.451**	0.140	0.016	0.001	0.684**	0.539**	-0.216	0.076	-0.264	1
	Sig. (1-tailed)	0.003	0.212	0.463	0.498	0.000	0.000	0.106	0.332	0.063	
	N	35	35	35	35	35	35	35	35	35	35

Note: **. Correlation is significant at the 0.01 level (1-tailed).
*. Correlation is significant at the 0.05 level (1-tailed).

Table 18 presents the Pearson Correlation Matrix, where we observed the following.

1. NI has a strong positive correlation with NB, TDS, TL, BDB, and a positive correlation with ROD, NIM, DDB, ROA, and NI has a strong negative correlation with ROI.
2. NB has a strong positive correlation with NI, TDS, TL, BDB, and a positive correlation with NIM, DDB, and ROA. NB has a strong negative correlation with ROI and a negative correlation with ROD.
3. TDS has a strong positive correlation with NI, NB, TL, and a positive correlation with NIM, DDB, BDB, and ROA, while it has a negative correlation with ROD and ROI.
4. TL has a strong positive correlation with NI, NB, TDS, DDB, and a positive correlation with NIM and ROA. TL has a strong negative correlation with ROI and a negative correlation with ROD.
5. ROD has a strong positive correlation with ROA and positive correlations with NIM, ROI, and NI, while it has negative correlations with NB, TDS, TL, DDB, and BDB.
6. NIM has a strong positive correlation with ROA and a positive correlation with NI, NB, TDS, TL, ROD, and ROI. NIM has a negative correlation with DDB and BDB.
7. DDB has a strong positive correlation with TL and BDB, and a positive correlation with NI, NB, and TDS. DDB has a negative correlation with ROD, NIM, and ROA, while it has a strong negative correlation with ROI.
8. BDB has a strong positive correlation with NI, NB, TL, DDB, and TDS, and a positive correlation with ROA. While there is a negative correlation with ROD, NIM has a strong negative correlation with ROI.
9. ROI has a positive correlation with ROD and NIM, while it has a negative correlation with TDS and ROA. It also has a strong negative correlation with NI, NB, TL, DDB, and BDB.
10. ROA has a strong positive correlation with ROD, NIM, and a positive correlation with NI, NB, TDS, TL, and BDB. ROA has a negative correlation with DDB and ROI.

4.5. Hypotheses Testing

In this section, nine hypotheses have been examined to estimate the implications of NBIFs on Bangladesh's financial sector.

4.5.1. Relationship between Net Income and Number of Branches

To find the relationship between net income and the number of branches, the following hypothesis has been formulated.

H_0: The net income of NBFIs in Bangladesh has no relationship with the number of branches.

H_1: The net income of NBFIs in Bangladesh has a relationship with the number of branches.

Table 19. Relationship between net income and number of branches.

Variable		Number of branches
Net income	Pearson correlation	0.695**
	Sig. (1-tailed)	0.000
	N	35

Note: **. Correlation is significant at the 0.01 level (1-tailed).

Table 19 presents that, since the significance level is given, this is 0.000, less than 0.05. The null hypothesis (H0) is rejected. The Pearson correlation matrix indicates that the relationship between the net income of NBFIs in Bangladesh and the number of branches is strongly positive (0.695) at a 0.05 significance level. Since the significance level is less than 0.05 (specifically 0.000), H0 is rejected. Therefore, it can be concluded that there is a significant relationship between the net income of NBFIs in Bangladesh and the number of branches. Furthermore, the positive relationship suggests that when the net income of NBFIs increases, the number of branches also tends to rise.

4.5.2. Relationship between Net Income and Total Deposit

To find the relationship between net income and total deposits, the following hypothesis has been tested.

H_0: The net income of NBFIs in Bangladesh has no relationship with total deposits.

H_1: The net income of NBFIs in Bangladesh has a relationship with total deposits.

Table 20. Relationship between net income and total deposits.

Variable		Total deposit
Net income	Pearson correlation	0.676**
	Sig. (1-tailed)	0.000
	N	35

Note: **. Correlation is significant at the 0.01 level (1-tailed).

Table 20 indicates that since the significance level is less than 0.05 the H0 is rejected. Therefore, it can be concluded that there is a relationship between the net income of NBFIs and total deposits in Bangladesh. This hypothesis is also supported by the Pearson correlation matrix, which indicates that the relationship between the net income of NBFIs and total deposits is strongly positive (0.676).

4.5.3. Relationship between Net Income and Total Loan

This hypothesis has been formulated to examine the relationship between net income and total loans.

H_0: The net income of NBFIs in Bangladesh has no relationship with total loans.

H_1: The income of NBFs in Bangladesh has a relationship with the total loan.

Table 21. Relationship between net income and total loan.

Variable		Total loan
Net income	Pearson correlation	0.859**
	Sig. (1-tailed)	0.000
	N	35

Note: **. Correlation is significant at the 0.01 level (1-tailed).

In this analysis, Table 21 indicates that the significance level value is 0.000, which is significant at the 0.05 level. Since the value is below 0.05, we reject the null hypothesis. This suggests there is a relationship between the net income of NBFIs in Bangladesh and total loans in Bangladesh. Therefore, the Pearson correlation matrix concludes that the relationship between the net income of NBFIs in Bangladesh and total loans is strongly positive (0.859).

4.5.4. Relationship between Net Income and Total Loan

To find the relationship between net income and return on deposit, the following hypothesis has been formulated.

H_0: The net income of NBFIs in Bangladesh has no relationship with the return on deposits.

H_1: The net income of NBFIs in Bangladesh has a relationship with the return on deposits.

Table 22. Relationship between net income and total loan.

Variable		Return on deposit
Net income	Pearson correlation	0.14
	Sig. (1-tailed)	0.212
	N	35

According to the analysis of Table 22, the Pearson correlation between the net income of NBFIs in Bangladesh and the return on deposits has a significance level of 0.212. The null hypothesis is accepted because the value exceeds

0.05. This indicates that there is no relationship between the net income of NBFIs in Bangladesh and the return on deposits.

4.5.5. Relationship between Net Income and Net Interest Margin

To find the relationship between net income and net interest margin, the following hypothesis has been formulated.

H_0: The net income of NBFIs in Bangladesh has no relationship with the net interest margin.

H_1: The net income of NBFIs in Bangladesh has a relationship with the net interest margin.

Table 23. Relationship between net income and net interest margin.

Variable		Net interest margin
Net income	Pearson correlation	0.255
	Sig. (1-tailed)	0.069
	N	35

According to the analysis of Table 23, the Pearson correlation between the net income of NBFIs in Bangladesh and the net interest margin has a significance level of 0.069. The null hypothesis is accepted because the value exceeds 0.05. This indicates that there is no relationship between the net income of NBFIs in Bangladesh and the net interest margin.

4.5.6. Relationship between Net Income and Doubtful Debts

To find the relationship between net income and doubtful debts, the following hypothesis has been formulated.

H_0: The net income of NBFIs in Bangladesh has no relationship with doubtful debts.

H_1: The net income of NBFs in Bangladesh has a relationship with doubtful debts.

Table 24. Relationship between net income and doubtful debts.

Variable		Doubtful debts
Net income	Pearson correlation	0.482**
	Sig. (1-tailed)	0.002
	N	35

Note: **. Correlation is significant at the 0.01 level (1-tailed).

Table 24 presents a significance level of 0.002, which is significant at the 0.05 level. Because the value is below 0.05, we reject the null hypothesis. This implies there is a relationship between the net income of NBFs in Bangladesh and doubtful debts in Bangladesh. The Pearson correlation matrix indicates that the relationship between the net income of NBFs in Bangladesh and doubtful debts is positive (0.482).

4.5.7. Relationship between Net Income and Bad Debts

To find the relationship between net income and bad debts, the following hypothesis has been formulated.

7. *H_0: The net income of NBFIs in Bangladesh has no relationship with bad debts.*

H_1: The net income of NBFIs in Bangladesh has a relationship with bad debts.

Table 25. Relationship between net income and bad debts.

Variable		Bad debts
Net income	Pearson correlation	0.571**
	Sig. (1-tailed)	0.000
	N	35

Note: **. Correlation is significant at the 0.01 level (1-tailed).

In Table 25, we found that the significance level is 0.000, which is significant at the 0.05 level. Because the value is below 0.05, we reject the null hypothesis. This implies there is a relationship between the net income of NBFIs in Bangladesh and bad debts. Thus, the Pearson correlation matrix concluded that the relationship between the net income of NBFIs in Bangladesh and bad debts is strongly positive (0.571).

4.5.8. Relationship between Net Income and Return on Investment

To find the relationship between net income and return on investment, the following hypothesis has been formulated.

8. H_0: The net income of NBFIs in Bangladesh has no relationship with the return on investment.

H_1: The net income of NBFIs in Bangladesh has a relationship with return on investment.

Table 26. Relationship between net income and return on investment.

Variable		Return on investment
Net income	Pearson correlation	-0.697**
	Sig. (1-tailed)	0.000
	N	35

Note: **. Correlation is significant at the 0.01 level (1-tailed).

We discovered through this analysis of Table 26 that the significance level value is 0.000, which is significant at the 0.05 level. Since the value is below 0.05, we are rejecting the null hypothesis. This implies that there is a relationship between the net income of NBFIs in Bangladesh and return on investment.

Regarding the correlation between the net income of NBFIs in Bangladesh and return on investment, there exists a strong negative correlation. This negative relationship indicates an inverse relationship between these two factors. Specifically, when the net income of NBFIs in Bangladesh increases, the return on investment tends to decrease. Conversely, when the return on investment increases, the net income of NBFIs tends to decrease.

4.5.9. Relationship between Net Income and Return on Assets

To find the relationship between net income and return on assets, the following hypothesis has been formulated.

9. H_0: The net income of NBFIs in Bangladesh has no relationship with the return on assets.

H_1: The net income of NBFIs in Bangladesh has a relationship with return on assets.

Table 27. Relationship between net income and return on assets.

Variable		Return on assets
Net income	Pearson correlation	0.451**
	Sig. (1-tailed)	0.003
	N	35

Note: **. Correlation is significant at the 0.01 level (1-tailed).

According to the analysis of Table 27, the Pearson correlation between the net income of NBFIs in Bangladesh and return on assets has a significance level of 0.003, which is significant at the 0.05 level. The null hypothesis is rejected because the p-value is less than 0.05. This indicates that there is a relationship between the net income of NBFIs in Bangladesh and return on assets.

5. POLICY IMPLICATION AND CONCLUSION

5.1. Policy Implications

There is no doubt that, in an emerging economy like Bangladesh, financial institutions and their performance are crucial to economic growth, where NBFIs have the potential to be one of the catalysts by solidifying their position. In Bangladesh, NBFIs are becoming more acceptable for contributing to the corporate and retail sectors. Although

this sector is thriving, it still faces challenges due to weak regulatory compliance, non-performing loans, lack of transparency, and financial instability.

To reduce the obstacles to the growth of NBFIs in Bangladesh's economy, improvement in policy and regulation is essential. The central bank of Bangladesh can play a vital role in this. Since NBFIs must directly compete with traditional banks, it is difficult for them to explore more. The Central Bank of Bangladesh can ease regulatory restrictions as they affect NBFIs' financial stability, adopt favorable policies, promote transparency, and manage NPLs effectively.

This study is among the few that assess the performance of selected non-bank financial institutions (NBFIs) in Bangladesh. It will help NBFI stakeholders evaluate the operations of NBFIs before investing. Selected NBFIs will also benefit from the study's findings to improve their performance.

However, to maintain the NBFI sector's growth, policymakers should prioritize high-yield investments, asset optimization, and operational efficiencies. Good governance, innovation, and technical integration should be the primary implications of this approach. It will not only strengthen NBFI growth but also contribute to the overall economic landscape.

5.2. Limitations and Suggestions for Future Studies

This study used a few selected NBIFs to analyze their performance in Bangladesh over a limited period of seven years. However, more NBIFs could be used in the future to analyze their performance.

5.3. Conclusion

While conducting this study, we did not obtain any information regarding digital transformation in these selected NBIFs' annual reports, which indicates that the NBFIs sector is lagging in terms of technology. Government regulatory bodies should be more receptive to the digital transformation of the NBFIs and should establish a technological framework similar to the concept of Digital Banking to make NBIFs more accessible. Instead of focusing solely on financial services such as microfinancing, SMEs, green financing, consumer credit, and others, which are already served by traditional banks, NBIFs should leverage the flexibility of their regulatory framework to offer extended services that attract a broader customer base. Bangladesh Bank should ensure both the necessary flexibility and oversee compliance standards that will help increase loans and deposits, as well as promote the growth and profitability of NBFIs. The regulatory authority should also mandate guidelines for NBFIs to diversify asset classes, help minimize risks, and ensure steady return on investment. Additionally, focus should be placed on infrastructural development of NBFIs, encouraging higher-yield and lower-risk investments to improve ROA and stabilize returns.

This study was conducted to evaluate the performance and trends of NBIFs in Bangladesh's economy. NBIF is a promising sector and has been contributing to the development of the commercial and retail sectors for over 40 years (Rahman, 2024). This assesses NBIFs' performance through various variables such as the number of branches, number of employees, total capital, debt to total capital, debt to equity, return on total capital, capital adequacy ratio, total deposits, total loans, loan/deposit ratio, return on deposits, net interest margin, doubtful debts, bad debts, return on investment, return on assets, and net income. These variables were analyzed using various statistical measures, e.g., growth percentage, trend equations, R-squared, and correlation matrix. Eighty-five trend equations and R-squared values have been tested for different relevant variables of NBIFs. Nine hypotheses have also been tested to evaluate the performance and trends of NBIFs. It is observed that there is a relationship between NBFI net income and the number of branches, which indicates that the increasing number of branches across the country positively impacts the net income of NBFIs. Therefore, NBFIs should focus on reaching a wider audience with their services. Similarly, total deposits and total loans have a positive relationship with the net income of NBFIs, implying the importance of sound mobilization of deposits and effective loan disbursement strategies. The NBFIs' net income is positively correlated with their return on assets (ROA), indicating that as ROA increases, net income also increases. This

correlation highlights the importance of operational efficiency and prudent asset management, along with sustainable investment strategies. We are optimistic that if selected NBIFs address the identified issues, their performance will improve, contributing significantly to the development of Bangladesh's financial sector.

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Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
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