

Determinants of profitability of Non Bank Financial Institutions: Evidence from Bangladesh

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Abstract: This project examines the determinants of profitability of Non Bank Financial Institutions (NBFIs) of Bangladesh in the context of strengthening and aligning the financial sectors with that of operating at the global level. Profitability provides a clue of effectiveness of firms' decisions and operational policies. The key factors emerged from the study like; liquidity, operating expenses, capital structure, total assets, etc significantly influence the financial performance of NBFIs. Different Statistical techniques such as correlation matrix, multiple regressions, Run test, and K-W test for randomness were used for the analysis of secondary data. The study highlighted the necessity of strategic financial decision of NBFIs in the emerging economy like Bangladesh to gain competitive edge in the changing global financial arena.

Key words: profitability, operational efficiency, capital structure, competitive edge.

1.00 Introduction

The financial performance of this sector has a colossal economy of the country. Typically financial sector refers to mainly banking sector any of the country. The NBFIs are a special type of financial institutions provides a host financial service like; credit guarantee in international business, export-import loans, project finance and consultancy, foreign exchanges etc besides arranging long term loans for the industry. The contribution of this sector towards the economy across the globe increased many folds and generated curiosity amongst the investors. Consequently, the financial performance of this sector is under the scanner of the stakeholders particularly in the context of present global financial crisis which seems to be immune to any policy measures. As the empirical studies suggest numbers of research works have already been accomplished on profitability aspect of banking sector but research work in respect of financial performance of the NBFIs in Bangladesh in the post financial crisis regime is at a nascent stage.

2.00 Objective of the study

The objectives of our research are as follows:

- (a) To identify the major financial features affecting the profitability in the NBFIs of Bangladesh and ,
- (b) To evolve financial strategy for the NBFIs in the context global financial crisis

3.00 Research Methodology:

a) Data source: The research is empirical in nature. We followed judgmental sampling with sample size consisting of all listed NBFIs in Bangladesh. The data for this study was gathered from the audited annual financial reports published by the listed 22 companies (NBFCs or NBFIs give reference). Further, other sources like annual report, magazines, brochures, journals, newspapers; websites, etc. were considered whenever found necessary.

b) Tools for Analysis: For processing the data, descriptive statistics, simple correlation and regression analysis and correlation matrix in some cases were used for better understanding of interrelationship and effectiveness of

variables. Statistical tests with the help of SPSS were conducted at 5% level of significance.

c) Variables for the study

To assess the intricacies of profitability and performance of NBFIs following dependent variable and the independent variables were considered:

d) Limitation

Limited access to the data is the prime limitation

Dependent Variable	Independent Variables
Financial Performance 1. Net profit (NP)	1. Total Assets (TA), 2. Total Liabilities (TL), 3. Net Worth (NW), 4. Term Deposit(TD), 5. Operating Revenue(OR), 6. Operating Expense(OE)

of this report, as the prime sources of data is the annual reports. Besides, scarcity of relevant literature is major hindrances of the report. Findings and inferences of the study will only be applicable for the conditions which prevailed during the period for which data were taken.

4.00 Literature Review

Several studies both in the country and abroad were undertaken to know the intricacies of profitability and its determinants. But the fact remains that, most of the researches have been conducted on banking industry. So, literature regarding profitability of NBFIs in Bangladesh in particular is at embryonic stage. An attempt is made hereunder to high light the contextual references for the area under study.

Fadzlan Sufian, and Roy faizal Razali Chong (2008) examined the determinants of profitability of Philippines banks during the period 1990–2005. Their empirical findings suggest that all the bank-specific variables have statistically significant impact on bank profitability. They also found that size, credit risk, and expenses, preference behavior are negatively related to banks' profitability, while non-interest income and capitalization have a positive impact. According to their analysis inflation has a negative impact on bank profitability, while the impact of economic growth, money supply, and stock market capitalization have not significantly explained

the variations in the profitability of the Philippines banks.

Shah-Noor Rahman and Tazrina Farah (2012), in their research paper “Non Bank Financial Institution’s Profitability Indicators: Evidence from Bangladesh” examined the indicators of the profitability of firms in the Non Banking Financial Institution (NBFIs) industry of Bangladesh. The study established a relationship between independent variables like; Current Assets, operating expenses, Long term liability, Interest Income, and Operating revenue and dependent variable; Net Profit (NP). It was observed that firms’ Liquidity and operational efficiency has significant impact on Profitability of Non Bank financial sector in Bangladesh.

James W. Scott and José Carlos Arias (2011) in their study” Banking profitability determinants” surveyed top five bank holding companies in the United states and concluded that determinants of profitability of the banking industry include positive relationship between the return of equity and capital to asset ratio as well as the annual percentage changes in the external per capita income. There was also a virtual consensus identified concerning the effect that the internal factor of size as measured by an organization’s total assets had on its ability to compete more effectively, even in times of economic downturns.

Christos K. Staikouras & Geoffrey E. Wood (2011) examined the factors that that influence the profitability of financial institution in their research paper “The Determinants of European Bank Profitability”. Their main finding was “the rate of return earned by a financial institution is affected by numerous factors. These factors include elements internal to each financial institution and several important external forces shaping earnings performance. The type of explanation would determine possible policy implications and ought to be taken seriously”. Their paper quantifies how internal determinants (“within effects” changes) and external factors (“dynamic reallocation” effects) contribute to the performance of the EU banking industry as a whole in 1994-1998.

Balchandher K. Guru, J. Staunton & B. Shanmugam (2009) in this research paper “Determinants of commercial bank profitability in Malaysia” examined to what extent are the profitability performance disparities due to variations in management controllable internal factors and external factors. He took net profit as his dependent variable and Asset Composition, Capital, Deposit Composition, Expenses Management, Liquidity, Firm Size, Inflation Rate, Market Growth, Market Interest, Market Share and Regulation as his independent variable. He suggested that all variable has significant relationship with net profit. And also he added that in order to increase profitability the Expense Management should be proper as this variable significance is very high.

Demirguc-Kunt & Huizinga (2001) and Bikker and Hu (2002) find a negative relationship between stock market capitalization and banks’ profitability, it means that equity and bank financing acts as substitutes rather than complements. In case of the industry-specific factors, the Structure- Conduct-Performance premise point out that growing market power enhances the profitability (income) of banks.

Antonina Davydenko (2011) surveyed about 3236 bank-quarter observations and concluded that Ukrainian banks suffer from low quality of loans and do not manage to extract considerable profits from the growing volume of deposits. Despite low profits from the core banking activities

James W. Scott and José Carlos Arias (2011) in their study “Banking profitability determinants” surveyed top five bank holding companies in the United and concluded that profitability determinants for the banking industry include positive relationship between the return of equity and capital to asset ratio as well as the annual percentage changes in the external per capita income. There was also a virtual consensus identified concerning the effect that the internal factor of size as measured by an organization’s total assets had on its ability to compete more effectively, even in times of economic downturns.

Nadim Jahangir’, Shubhankar Shill and Md. Amlan Jahid Haque (2007) surveyed 15 commercial banks in Bangladesh and found that market concentration and bank risk do little to explain bank return on equity, whereas bank market size is the only variable providing an explanation for banks return on equity in the context of Bangladesh. They found that market size and bank’s return on equity proved to have strong relationship. Also, a strong and significant relationship was identified between market size and bank’s return on equity. It suggests that capital adequacy is important for a bank to be profitable.

To sum up, aforesaid reviews of literature confirm that no significant studies have been undertaken in the NBFIs in Bangladesh. However, variables considered have contextual reference to the study which is proposed to be considered for the study.

5.00 Non Banking Financial Industry (NBFIs) in Bangladesh

Table: 1

Industry snapshot (5 October, 2012)s	
Paid-up Capital (BDT million)	20438.96
Number of listed Company	22
Capitalization (BDT)	163,911,375,872
Sector PE	19.1
Sector Earning	8,714,468,569
Sector Beta	0.905396574

Source: www.stockbangladesh.com

Non-Bank Financial Institutions (NBFIs) are those institutions that are licensed and monitored under the Financial Institutions Act of 1993 (FIA 93). NBFIs give long term loans and advances for industry, commerce, agriculture or housing; carries on business of hire purchase transactions including leasing of machinery or equipment; involves in business of the underwriting or acquisition of, or the investment or re-investment in shares, stocks, bonds, debentures or debenture stock or securities issued by the government or any local authority; Finances venture capital; gives loan for house building and property purchases and uses its capital to invest in companies. The

major differences of NBFIs with commercial banks are that the former cannot accept any deposit which is payable on demand by cheques, drafts or orders drawn by the depositor and cannot deal in foreign exchange. Starting from the IPDC in 1981, a total of 31 NBFIs are now operating in the country as of October, 2012. And out of 29 NBFIs 22 companies are listed at DSE and CSE.

6.00 Empirical research & explanation

In this section, attempt has been made to determine the association between company's bottom line (Net Profit) and different operational variables as highlighted in the review of literature with appropriate statistical tools. At first, a simple regression model is

executed with each of the independent explainers. In this model, the dependent variable is Net Profit and the independent factors are Total Assets, Net Worth, Total Liability, Term Deposit, Operating Expense and Operating Revenue. These variables are chosen in accordance with the eminence that in what degree those can contribute to the determination of profitability. In the second part of analysis, an investigation has been undertaken through multiple regression models. The dependent and independent factors are kept the same as in the simple regression model. The empirical study has been done as a whole to find out the extent of relationship between dependent and independent variables.

6.01 Descriptive Statistics

Table: 2

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
NP	86	-6.E7	5.E9	4.26E8	7.822E8	6.118E17
TA	86	1.E9	6.E10	1.05E10	1.016E10	1.033E20
NW	86	4.E8	3.E10	2.15E9	4.256E9	1.811E19
TL	86	8.E8	3.E10	8.31E9	7.011E9	4.916E19
TD	86	6472378	3.E10	4.67E9	5.444E9	2.964E19
OR	86	6.E7	7.E9	7.94E8	1.144E9	1.309E18
OE	86	1.E7	1.E9	1.58E8	1.915E8	3.666E16
Valid N (list-wise)	86					

In this table different descriptive statistics such as minimum, maximum, mean, standard deviation and variance of all selected variable has been included.

6.02 Correlation Matrix

Table: 3

Correlations								
		NP	TA	NW	TL	TD	OR	OE
NP	Pearson Correlation	1	.871**	.943**	.688**	.789**	.962**	.675**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	86	86	86	86	86	86	86
TA	Pearson Correlation	.871**	1	.834**	.942**	.963**	.928**	.829**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	86	86	86	86	86	86	86
NW	Pearson Correlation	.943**	.834**	1	.601**	.764**	.879**	.616**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	86	86	86	86	86	86	86
TL	Pearson Correlation	.688**	.942**	.601**	1	.933**	.809**	.825**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	86	86	86	86	86	86	86
TD	Pearson Correlation	.789**	.963**	.764**	.933**	1	.864**	.778**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	86	86	86	86	86	86	86
OR	Pearson Correlation	.962**	.928**	.879**	.809**	.864**	1	.810**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	86	86	86	86	86	86	86

OE	Pearson Correlation	.675**	.829**	.616**	.825**	.778**	.810**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	86	86	86	86	86	86	86

** . Correlation is significant at the 0.01 level (2-tailed).

In this table the correlation among all variable has been shown. Especially the correlation between dependent variable and independent variable has been shown. All the independent variables are positive correlated with net profit except operating expense. As the result suggests, the association of operating efficiency (operating revenue) is the highest among all the variables.

6.03 Goodness of Fit test

The goodness of fit test applies to situation in which we want to determine whether a set of data may be looked upon as a random sample from a population having a given distribution. Normally it is done to find out whether values

of variable are normally distributed or not. Kolmogorov-Smirnov goodness of fit test is used in the study. This part is done to determine whether to do parametric test or non-parametric test.

Table: 4

One-Sample Kolmogorov-Smirnov Test								
		NP	TA	NW	TL	TD	OR	OE
N		86	86	86	86	86	86	86
Normal Parameters ^a	Mean	4.26E8	1.05E10	2.15E9	8.31E9	4.67E9	7.94E8	1.58E8
	Std. Deviation	7.822E8	1.016E10	4.256E9	7.011E9	5.444E9	1.144E9	1.915E8
Most Extreme Differences	Absolute	.285	.183	.338	.159	.247	.265	.257
	Positive	.268	.179	.307	.159	.247	.265	.257
	Negative	-.285	-.183	-.338	-.141	-.196	-.260	-.226
Kolmogorov-Smirnov Z		2.641	1.693	3.137	1.476	2.293	2.461	2.383
Asymp. Sig. (2-tailed)		.000	.006	.000	.026	.000	.000	.000
a. Test distribution is Normal.								

Hypothesis: Null Hypothesis (H_0): The values are normally distributed.

Decision: As the P-value of all variables are greater than 0.05, we cannot reject the null hypothesis. So all variables' values are normally distributed. So we can use parametric test.

6.04 Mean Test Analysis

Table: 5

One-Sample Test						
Test Value = 0						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
NP	5.051	85	.000	4.260E8	2.58E8	5.94E8
TA	9.571	85	.000	1.049E10	8.31E9	1.27E10
NW	4.689	85	.000	2.152E9	1.24E9	3.06E9
TL	10.996	85	.000	8.314E9	6.81E9	9.82E9
TD	7.963	85	.000	4.675E9	3.51E9	5.84E9
OR	6.432	85	.000	7.936E8	5.48E8	1.04E9
OE	7.640	85	.000	1.577E8	1.17E8	1.99E8

Hypothesis: Null Hypothesis: Mean of variable is equal to zero

Decision: The significance level of all variable is lower than 0.05. Therefore, the null hypothesis should be rejected. So it can be stated that mean of all variable is not equal to zero.

6.05 Simple Regression Analysis

In this part of report we will start to estimate simple regression model keeping financial performance i.e. Net Profit of all company as dependent variable and all other financial

circumstances indicator as independent variable. Simple regression model will follow below format: $Y = a + bX$; Where, Y= Dependent variable, a= Y- intercept/constant, b=slope, X= independent variable. The outputs of regression

are summarized in the following table:

Table: 6

Dependent Variable	Independent Variable	Equation	R ²	F- test Value	p Value of the Model
Net Profit (NP)	Total Asset (TA)	NP = -2.774+ .871 TA	75.60%	264.78	.000
	Total Liability (TL)	NP = 5.299+ .688 TL	88.80%	677.88	.000
	Net Worth (NW)	NP = -2.12+ .238 NW	47.70%	75.512	.000
	Term Deposit (TD)	NP = -1.03+ .789 TD	61.80%	138.50	.000
	Operational Revenue (OR)	NP = -9.59+ .962 OR	92.50%	1.044	.000
	Operational Expense (OE)	NP = -9.27+ .329 OE	45.00%	70.49	.000

Among this 6 performance indicating Operating Revenue have the highest value for R² (92.50%) which indicates that this can explain 92.50% of the variations in profitability over this 4 years of time horizon (2008-2011). P- Value (0.00) of F - tests at 95% confidence level states that the result is significant as it is less than 0.05.

However, Total Equity has the lowest value of R² (47.70%) and P value (0.456) of F test, which indicates that this variable has very lower impact on profitability as a predictor (i.e. independent) variable when used in simple regression analysis.

6.06 Multiple Regression Model

6.06.1 Model Details

Table: 7

Variables Entered/ Removed ^b			
Model	Variables Entered	Variables Removed	Method
1	OE, TA, NW, TL, OR, TD		Enter

a. Dependent Variable: NP

6.06.2 ANOVA

Null Hypothesis: independent variables have no combined impact on NBFIs bottom line,

or $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$

Alternative Hypothesis: $\beta_i > 0$, where, $i=1 \dots 6$

Table: 8

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.118E19	5	1.024E19	10.002E3	.000 ^a
	Residual	8.175E17	80	1.022E16		
	Total	5.200E19	85			

a. Predictors: (Constant), OE,TA, NW, TL, OR, TD

b. Dependent Variable: NP

Explanation:

The SPSS output for ANOVA shows that F value is 10.002 and the level of significance is .000. Because the F value is greater than the

critical F value of 5.11 or 8.17 and the significance level .000 is lower than acceptable level of significance .05, we can reject the null hypothesis.

Table: 9

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	-3.056E7	2.001E7		.131
	TA	.025	.193	.301	.011
	NW	.074	.007	.401	.000

	TL	.011	.006	.097	1.758	.003
	TD	-.029	.008	-.203	-3.582	.001
	OR	.588	.033	.860	18.085	.000
	OE	-.781	.115	-.191	-6.774	.000
a. Dependent Variable: NP						

6.06.3 Main Model

Table: 10

Multiple Regression Model	
Model	Net Profit = -3.05 + .301 TA + .097 TL + .401 NW + (-.203) TD + .86 OR + (-.191) OE
Other Statistics for Model	
R	.992
R ²	.983
F- test value	17.482
P- value of F test	.000 ^a

Explanation:

Profitability related with performance indicators in the following ways:

- For 1 (one) unit increases in Total Assets, Total Liability, Net Worth, & Operating Revenue, Net Profit will increase by 0.301 units, 0.097 units, 0.401 units, & 0.86 units respectively and vice versa;
- For 1 (one) unit increases in Term Deposit, & Operating Expense, Net Profit will decrease by 0.203 units, & 0.191 units respectively and vice versa;

- The relationship among the variables in relative terms can be estimated with the help of coefficient of multiple correlations (R). R = .992 indicates that there exists a high degree of relationship among the variables. From the value of R² we can say that all these 6 predictor variables combined explain 98.30% of the variance in Net Profit. The P-value (0.00) of F- test states that the regression is significant.

7.00 Model Diagnostic Analysis

Discussion A. Test for Normality Residuals

Table: 11

Case Processing Summary						
Cases						
Valid		Missing		Total		
N	Percent	N	Percent	N	Percent	
Unstandardized Residual	86	100.0%	0	.0%	86	100.0%
Descriptives						
			Statistic		Std. Error	
Unstandardized Residual	Mean		-4.7129254E-8		1.05753423E7	
	95% Confidence Interval for Mean	Lower Bound	-2.1026614E7			
		Upper Bound	2.1026614E7			
	5% Trimmed Mean		-1.0088967E6			
	Median		-3.7264290E5			
	Variance		9.618E15			
	Std. Deviation		9.80716895E7			
	Minimum		-3.61227E8			
	Maximum		3.11238E8			
	Range		6.72465E8			
	Interquartile Range		8.12592E7			
	Skewness		.132		.260	
	Kurtosis		3.543		.514	

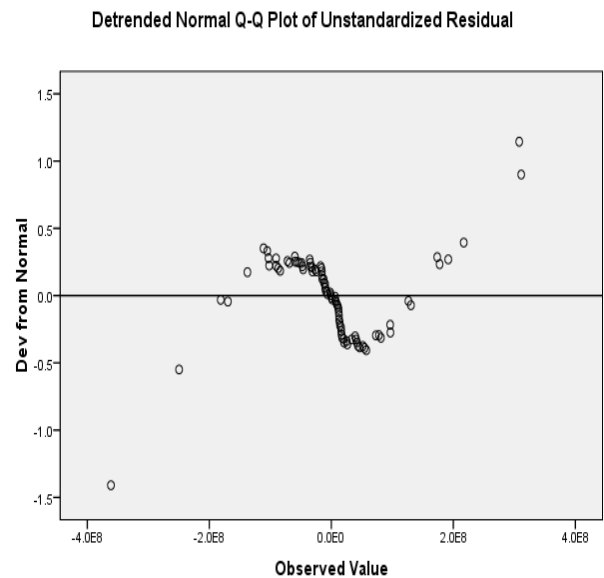
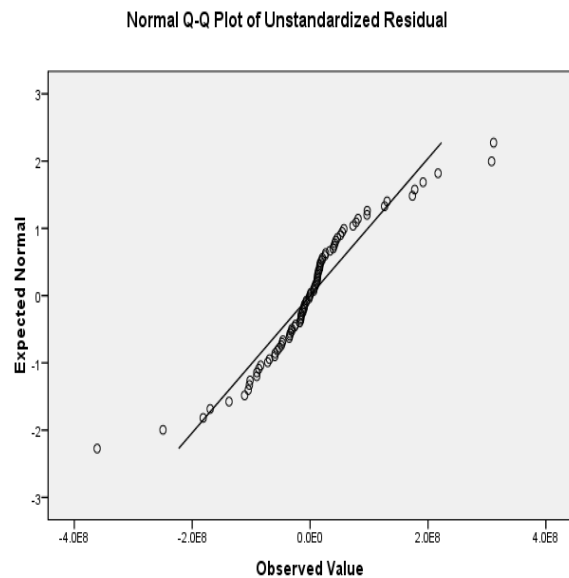
Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.139	86	.000	.916	86	.000
a. Lilliefors Significance Correction						

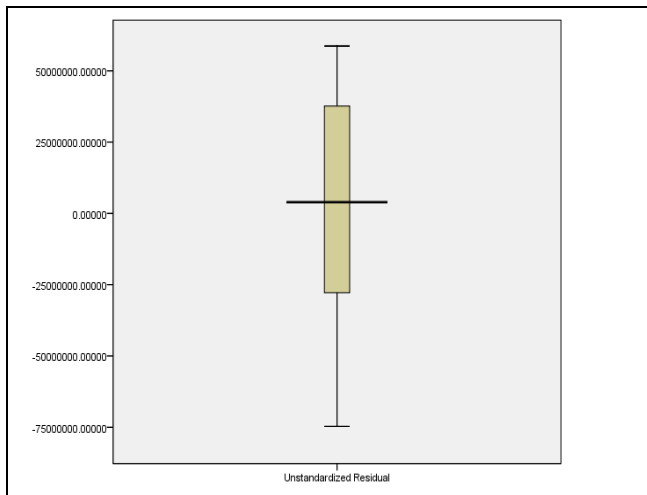
Unstandardized Residual Stem-and-Leaf Plot

```

Frequency      Stem & Leaf
  4.00 Extremes      (= <-2E+008)
  5.00      -1.  00013
 10.00      -0.  5555678899
 24.00      -0.  000001111111112233333444
 27.00       0.  00000011111111112222334444
  8.00       0.  55577899
  2.00       1.   23
  6.00 Extremes      (>=173582737)
Stem width:    1.0E+008
Each leaf:     1 case(s)

```



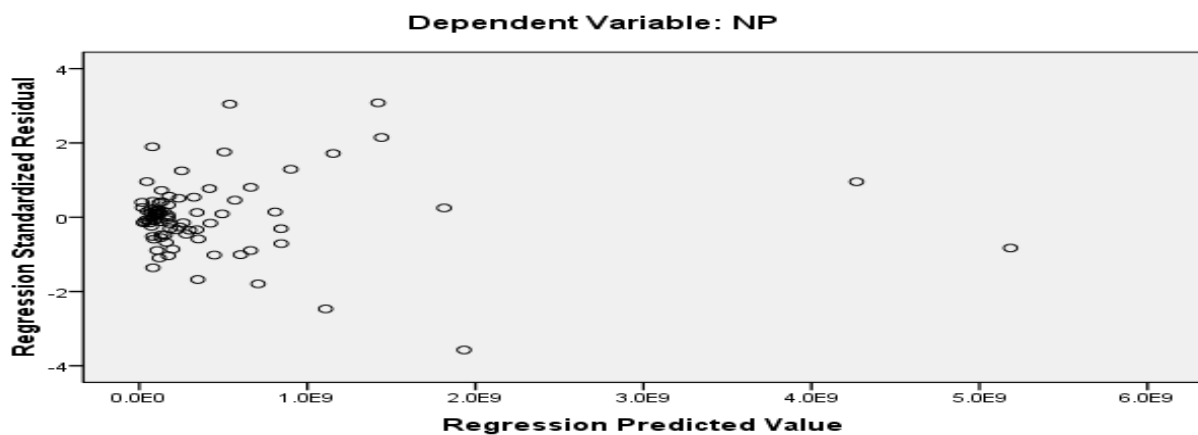


Explanation:

We now use the examiner command to look at the normality of these residuals. All of the results from the examiner command suggest that the residuals are not fully normally distributed the skewness and kurtosis are near 0, the "tests of normality" are not significant, the histogram looks normal, and the Q-Q plot looks normal. Based on these results, the residuals from this regression appear to conform to the assumption of being normally distributed.

Discussion B: Hetrocedasticiy Test:

Scatterplot



Explanation: The residuals looked good so there is no problem of heterocedasticity.

Discussion C: Multi-collinearity test

Table: 12

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-3.056E7	2.001E7		-1.527	.131		
	TA	.025	.193	.901	.131	.899	.000	6.516
	NW	.074	.007	.401	10.140	.000	.126	7.968
	TL	.011	.006	.097	1.758	.083	.064	5.635
	TD	-.029	.008	-.203	-3.582	.001	.061	6.272
	OR	.588	.033	.860	18.085	.000	.087	1.515
	OE	-.781	.115	-.191	-6.774	.000	.247	4.053
a. Dependent Variable: NP								

Explanation:

As the VIF Value is less than 10 so there exists no Multi-collinearity Problem.

8.00 Findings & Conclusion

According to our study it is clear that the profitability IS INFLUENCED BY HOST the independent variables SUCH AS Total Asset, Term Deposit, Operating Revenue, and Operating Expenses. As we know that Total asset is considered as one of the most prominent yardstick of financial stability measurement of financial institutions, stakeholders generally perceive the financial institutions to be superior over the others if its total asset is higher than other institutions. When an NBFIs has huge Operating Revenue and Total Equity the investors feel more secured and approach to this NBFIs for their investment. As the number of customers increases it results in more profitable organization. Again we see operating revenue is the another variable which has a major impact on net profit. So it is undoubtedly true that if the revenue increases, ultimately it has a positive effect over the profitability.

The results of multiple regressions suggest that the selected independent variables explain more than 98.30% changes in the net profit. By analyzing the other statistical results of multiple regressions we found that the results are very much consistent with the simple regression. All the results are statistically significant and overall provide an idea that liquidity is the basic determinant of profitability in NBFIs sector. So it can be inferred that this promising and potential sector in Bangladesh can flourish very fast and enhance profitability by improving total equity and operating efficiency.

The findings of the paper is not conclusive rather informative. It leaves room for further study in different functional areas of NBFIs using Data Envelopment Analysis (DEA), CAMELS rating, robust estimation approach based on the competing efficient structure (ES) hypothesis, effect of commercial property price movements, use of statistical tools and more. Moreover, the bindings of government policies over the period particularly both pre and post

financial crisis regime on the performance of NBFIs have not been considered.

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