

**NON-PERFORMING ASSETS AND PROFITABILITY
OF COMMERCIAL BANKS IN NEPAL
(An Analytical Study of Six Commercial Banks)**

A THESIS

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RECOMMENDATION

This is to certify that the Thesis

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NON-PERFORMING ASSETS AND PROFITABILITY OF COMMERCIAL BANKS IN NEPAL

(An Analytical Study of Six Commercial Banks)

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According to the prescribed format. We recommend the thesis to
be accepted as partial fulfillment of the requirement for
Master Degree of Business Studies (MBS)

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DECLARATION

I hereby declare that the work reported in this thesis entitled “**NON-PERFORMING ASSETS AND PROFITABILITY OF COMMERCIAL BANKS IN NEPAL (An Analytical Study of Six Commercial Banks)**” submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the Master's Degree in Business Study (**MBS**) under the supervision of **Jitendra Upadhyay, Lecturer** of Nepal Commerce Campus.

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Table of Content

Recommendation
Viva-Voce Sheets
Declaration
Acknowledgements
Abbreviations
Table of Content
List of table
List of Figure

	Page
CHAPTER – I INTRODUCTION	1-7
1.1 Background of the Study	1
1.2 Statement of the Problems	2
1.3 Research Questions	4
1.4 Objectives of the Study	4
1.5 Significances of the Study	5
1.6 Test of Hypothesis	6
1.8 Limitation of the Study	7
1.9 Organization of the Study	7
CHAPTER – II REVIEW OF THE LITERATURE	9-24
2.1 History of Nepalese Banks	9
2.2 Definition of Loan and Advances	13
2.3 Definition of NPA	14
2.4 Classification of NPA	15
2.4.1 Pass	15
2.4.2 Substandard	15

2.4.3 Doubtful	16
2.4.4 Loss	16
2.5 Review of the Previous Studies	18
2.6 Research Gap	23
CHAPTER – III RESEARCH METHODOLOGY	25-37
3.1 Research Design	25
3.2 Populations and Sample	26
3.3 Sources of Information	31
3.4 Data Presentation and Analysis	32
3.5 Data Analysis Tools	32
3.5.1 Financial Tools	32
3.5.2 Statistical Tools	34
CHAPTER – IV DATA PRESENTATION AND ANALYSIS	38-82
4.1 Data Presentation and Analysis of Sample Banks	39
4.2 Correlation Analysis	69
4.3 Test of Hypothesis	74
4.4 Major Findings	78
4.4.1 Finding from Trend Analysis, and Correlation Analysis	78
4.4.2 Finding through Test of Hypothesis	82
CHAPTER – V SUMMARY, CONCLUSION AND RECOMMENDATIONS	83-88
5.1 Summary	83
5.2 Conclusion	85
5.3 Recommendations	85

List of Table

Tables		Page
2.1	Classification of Loan and Advance	17
3.1	List of Commercial Banks in Nepal	26
4.1	Relation Between NPA, Net Profit, TL, and TD (NABIL)	39
4.2	Total Assets, Total Deposit, Total Landing and Total NPA (NABIL)	41
4.3	Net Profit and Total NPA (NABIL)	42
4.4	Relation Between NPA, Net Profit, TL, and TD (SCBNL)	44
4.5	Total Assets, Total Deposit, Total Landing and Total NPA (SCBNL)	46
4.6	Net Profit and Total NPA (SCBNL)	47
4.7	Relation Between NPA, Net Profit, TL, and TD (HBL)	49
4.8	Total Assets, Total Deposit, Total Landing and Total NPA (HBL)	51
4.9	Net Profit and Total NPA (HBL)	52
4.10	Relation Between NPA, Net Profit, TL, and TD (NIBL)	54
4.11	Total Assets, Total Deposit, Total Landing and Total NPA (NIBL)	55
4.12	Net Profit and Total NPA (NIBL)	57
4.13	Relation Between NPA, Net Profit, TL, and TD (BOK)	59
4.14	Total Assets, Total Deposit, Total Landing and Total NPA (BOK)	60
4.15	Net Profit and Total NPA (BOK)	62
4.16	Relation Between NPA, Net Profit, TL, and TD (NBBL)	63
4.17	Total Assets, Total Deposit, Total Landing and Total NPA (NBBL)	65
4.18	Net Profit and Total NPA (NBBL)	67
4.19	Correlation between NPA and ROA of Sample Banks.	70
4.20	Correlation between Total Landing and NPA of Sample Banks.	71
4.21	Correlation coefficient between NPA of sample Banks and Population.	72

List of Figure

Figures		Page
4.22	Trend Analysis of Level of NPA,ROA & Loan-Deposit Ratio (NABIL)	40
4.23	Graphical Representation of TA,TD,TL and NPA (NABIL)	42
4.24	Graphical Representation Net Profit and TNPA (NABIL)	43
4.25	Trend Analysis of Level of NPA,ROA & Loan-Deposit Ratio (SCBNL)	45
4.26	Graphical Representation of TA,TD,TL and NPA (SCBNL)	47
4.27	Graphical Representation Net Profit and TNPA (SCBNL)	48
4.28	Trend Analysis of Level of NPA,ROA & Loan-Deposit Ratio (HBL)	50
4.29	Graphical Representation of TA,TD,TL and NPA (HBL)	52
4.30	Graphical Representation Net Profit and TNPA (HBL)	53
4.31	Trend Analysis of Level of NPA,ROA & Loan-Deposit Ratio (NIBL)	55
4.32	Graphical Representation of TA,TD,TL and NPA (NIBL)	57
4.33	Graphical Representation Net Profit and TNPA (NIBL)	58
4.34	Trend Analysis of Level of NPA,ROA & Loan-Deposit Ratio (BOK)	59
4.35	Graphical Representation of TA,TD,TL and NPA (BOK)	61
4.36	Graphical Representation Net Profit and TNPA (BOK)	63
4.37	Trend Analysis of Level of NPA,ROA & Loan-Deposit Ratio (NBBL)	65
4.38	Graphical Representation of TA,TD,TL and NPA (NBBL)	67
4.39	Graphical Representation Net Profit and TNPA (NBBL)	68

ABBREVIATIONS

ARM	:	Adjustable Rate Mortgage
BOK	:	Bank of Kathmandu Limited
CRR	:	Cash Reserve Ratio
FY	:	Fiscal Year
HBL	:	Himalayan Bank Limited
HMG	:	His Majesty's Government
JVB	:	Joint-Venture Bank
NBA	:	Non-Banking Assets
NBBL	:	Nepal Bangladesh Bank Limited
NBL	:	Nepal Bank Limited
NIBL	:	Nepal Investment Bank Limited
NIC	:	Nepal Industrial and Commercial Bank
NP	:	Net Profit
NPA	:	Non-Performing Assets
NRB	:	Nepal Rastra Bank
RBB	:	Rastriya Banijya Bank
ROA		Return on Assets
ROE	:	Return on Equity
ROI	:	Return on Investment
SCBNL	:	Standard Chartered Bank Nepal Limited
SOE	:	State Owned Enterprises
TD	:	Total Deposit
TL	:	Total Lending
TP	:	Total Profit

CHAPTER - I

INTRODUCTION

1.1 Background of the Study

Non-performing Assets [NPA] means the amount of loan that the individual. Commercial bank had provided and the consumer has not paid it until the time is already matured. Once the distributed loan is not returned timely by clients and becomes overdue then, it is known as Non Performing Assets for the bank. Reduction of NPA has always been a significant problem for every commercial banks and proper attention for the management of the NPA now has got the top priority. Due to various hurdles on the way of management of NPA, commercial banks are now losing their profitability and struggling for the existence.

NPA may be defined broadly as the bad debt however, in terms of banking sector consists of those loans and advances which are not performing well and likely to be turn as bad debt. NPA as per the current directives of Nepal Rastra Bank (NRB) has been categorized as classified loans and advances. NPA has severe impacts on the financial institutions. On the one hand, the investment becomes worthless as expected return cannot be realized and on the other, due to the provision required for the risk mitigation the profitability is directly affected. The existence of the bank can be questioned in this situation. Thus, interest along with principal has to be recovered timely and without any obstacles.

“Non-performing assets could wreck banks profitability both through a loss of interest income and need to write off the principal loan amount. It tackles the subject of an entire starting from the stage of their identification till the recovery of dues in such amount” (Bindani, 2003).

“To start with performance in terms of profitability in a benchmark for any business enterprises, including the banking industry, however increasing non performing assets have a direct impact on banks profitability as legally banks are not allowed to book income on such accounts and at the same time banks are forced to make provisions on such assets" (Manamohan, 2002).

Loans and Advances dominate the assets side of balance sheet of any bank. Similarly, earning from such loans and advances occupy major space in income statement of the banks. However, it is very important to be reminded that most of the bank failures in the world were due to shrinkage in the value of the loan and advances. Hence, loan is known as risky assets. Risk of non-repayment of loan is known as credit risk or default risk. Performing loans have multiple benefits to the society while non-performing loans erodes even existing capital.

Performing assets are those loans that repay principal and interest to the bank from the cash flow it generates. Loans are risky assets, though a bank interest most of its resources in granting loans and advances. If an individual bank has around 10% non-performing assets or loans, it sounds the death knell of that bank, other things remaining the same. The objectives of loan policy are to maintain the financial health of the banks, which result in safety of depositor's money and increase in the returns to the shareholders. Since the loan is a risky asset there is inherent risk in every loans, however, the bank should not take risk above the certain degree irrespective of the returns prospects.

1.2 Statement of the Problems

High level of NPA is a matter of grave concern for the bank and public alike because bank credit is the catalyst to the economic growth of the country. Rapid

rise in NPA level brings an adverse economic environment to the country. In order to have a permanent presence in the market, bankers must have enough vigilance to control the NPA within a reasonable limit.

As shown by the Nepal Rastra Bank on its statistical report on the Non Performing Assets of commercial banks, the average NPA of all commercial banks to total gross loan is 3.60% in FY 2065/66 which is less than the previous year NPA level i.e. 6.30%. The NPA level of NIBL and SCBNL is 0.6% and 0.7% respectively, which determines its good health and where as the NPA level of NBBL was 19.30 % highest of all and which show the poor health of the bank. The NPA of NABIL, BOK and HBL are 0.80%, 1.3% and 2.2% respectively.

Assets are the most critical factor in determining the strength of any bank. The primary factors that can be considered are the quality of the loan portfolio, mix of risk assets and the credit administration system.

The lower NPA ratio indicates better risk assessment and robust credit management system are in place and vice-versa. At the same time higher loan loss provisions indicate poor credit management; it also indicates adequate reserve for possible loan loss, protecting the balance sheets of respective banks.

Nepalese Commercial Banking industry is still under the developing condition. Considering the current period, we find this phase was hit by situation like political uncertainty, conflict and unrest in the country. Even in this kind of a scenario, the fact that, overall, the banking sector was able to increase their assets base by a significant percentage indicates that they have been capable of switching their areas of investments. One good example would be the retail sector (housing, vehicle, personal loans, etc).

This study will investigate the effects of Non-Performing Assets of the bank on its total lending policy and its profitability. The investigation will be conducted on a “real work” setting and will use a computer – based task. A sample of 6 commercial banks among 31 commercial banks is taken. Thus, this study makes a modest attempt to analyze the non- performing assets of the banks.

1.3 Research Questions

There are four research questions in this study to find out the effect of NPA on the bank:

1. What is the overall impact of the NPA on the profitability of the Commercial Banks under study?
2. Is there any relationship between NPA and the profitability of the Commercial Banks and the other Non-Banking Assets, [NBA]
3. What might be the other factors that influence the non-performing assets of the Commercial Banks in the banking industry of Nepal?
4. Are there any internal factors of the individual Commercial Banks in increment of the non-performing assets of them?

1.4 Objectives of the Study

Increasing NPA has now become the major issue for every commercial bank. Every bank now has put the NPA management under the top priority and is functioning to reduce the major part of it from the assets side of their balance sheet. The main objectives of the study are to access the non-performing assets of the different banks under the study. The other specific objectives of the present study are listed as follows:

- To evaluate the Non-Performing Assets of the different banks that has become the challenge to the Commercial Banks in the Nepalese banking industry.
- To access the relationship between the profitability and the Non- Perform-

- ing Assets of the Commercial Banks.
- To recommend for the improvement of the management of NPA on the basis of the findings of the study.

1.5 Significances of the Study

The proper mobilization and utilization of domestic resource become indispensable for suitable economic development and there is no doubt that commercial banks have pivotal role for the collection of dispersed small savings of Nepalese people and transforming them into meaningful investment. The success and prosperity of the bank relies heavily upon the successful investment of collected resources to the important sectors of economy as well as to generate more profit by investing in the consumer's demand. The main aim of the present study is to find out what sorts of tools and techniques have been used to overcome the problem of conversion of performing assets into the non-performing assets, by the commercial banks in the country and to analyze what other kinds are being used in the present world that the corresponding banks can adopt, if found, under the study.

Loans and advances are the most profitable of all the assets of a bank. These assets constitute primary sources of income to the bank. It means interest earned from such loan and advances occupy major space in income statement of the bank. Since loans and advances are more profitable than any of other assets, the bank is willing to lend as much as its fund as possible. But it has to be careful about the safety of such loans and advances. It is very important, therefore, to remember that most of the banks failures in the world are due to the shrinkage on the value of loans and advances. Hence loan is known as risky assets. Risk of non-repayment of loan is known as credit risk or default risk. Performing loan/assets has multiple benefits while non-performing loan/assets much money a bank is able to lend, but it depends upon the quality of the loan. So success of

a bank depends upon the amount of performing assets/ loan. Performing assets are those loans that repay principal and interests to the bank from the cash flow it generates.

It is well known fact that bank and financial institutions in Nepal have been facing the problem of swelling non-performing assets and issues is becoming more and more unmanageable. Unfortunately, nowadays, banks are the victims of high level of NPA, which has been the subject of headache to the banking sector and Nepalese banking industry is not also exception from this truth.

This present study mainly concern with the analysis of level of NPAs in total assets, total deposits and total lending of different commercial banks of Nepal. Therefore, it is significant to find out the level of NPA and to find out whether the banks maintained loan loss provision in accordance to NRB's directives or not. It also examines the effects of NPA in ROE and ROA of the bank and points out the defect inherent in it and provide package of suggestion for its improvement if found any.

Apart from above, this study will be a matter of interest for the students, academicians and other professionals.

1.6 Test of Hypothesis

The main objective of this test is to test the significance regarding the parameters of the population on the basis of sample drawn from the population. In this study we set the following hypothesis:

- Is there any significant relation between total lending of Commercial Bank and the amount of the non-performing assets?
 - Null Hypothesis, H_0 : $p=0$, i.e. there is significant relation between total lending of Commercial Bank and the amount of the non-performing assets.

- Alternative hypothesis, $H_1: P \neq 0$, i.e. there is not any significant relation between total lending of Commercial Bank and the amount of the non-performing assets.
- Is there any significant relation between the amount of non-performing assets of sample banks and the population?
 - Null hypothesis, $H_0: p=0$, i.e. there is significant relation between the amount of non-performing assets of sample banks and the population.
 - Alternative hypothesis, $H_1: P \neq 0$, i.e. there is not any significant relation between the amount of non-performing assets of sample banks and the population.

1.8 Limitation of the Study

The Following are the limitations:

1. Profitability of an organization is caused by many factors. This study, however, covers only those factors, that are directly affected by the non-performing assets of the Commercial Banks.
2. The whole study is based on secondary data provided by the concerned banks.
3. The whole study is based on five years data.
4. The study covers only six banks.

1.9 Organization of the Study

The whole study is divided into the following five different chapters.

Chapter – I Introduction

This chapter includes background of the study, statements of the problems, research questions, significance of study, test of hypothesis, research methodology

and limitation of the study and objectives of the study.

Chapter – II Review of Literature

This chapter is basically concerned with the review of the literature relevant to the non- performing assets of the Commercial Banks.

Chapter – III Research Methodology

This chapter includes introduction, research design, population and sample, sources of the information used, period of the study, financial indicators and the statistical tools used.

Chapter – IV Data Presentation and Analysis

This chapter includes presentation of the financial variables and the statistical tools used while interpreting the data so collected from the different sources.

Chapter – V Summary of Findings, Conclusions and the Recommendations

This chapter briefly represents the summary of the whole study made and the conclusions so made and the recommendations for the effective and smooth running of the concerned commercial banks under the study.

CHAPTER - II

REVIEW OF THE LITERATURE

2.1 History of Nepalese Banks

There are several types of banks but among them commercial banks play significant contribution in the financial system of the country. They pool together the savings of the community and arrange for their productive use. They supply the financial needs of modern business by various means. They accept deposits from public on the condition that they are repaid on demand or on short notice. Their business is confined to financing the short-term and medium term needs of trade and industry such as working capital financing.

Commercial Bank Act 2031 B.S. of Nepal has defined the commercial banks as an organization, which exchanges money, accepts, grants loans and performs commercial banking functions and which is not a bank meant for co-operative, agriculture, industries or for such specific purpose.

It is the fact that financial sector plays a vital role for the economic development of a country. Even before the establishment of a banking system in Nepal, financial transactions were in practice as undertaken by some moneylenders like Sahu-Mahajans, Jamindars, relatives, friends, and few informal organizations limited to ethnic group such as Guthi. The borrowing from the other people and the informal organization was limited and based on personal understanding. At that time people deposit their gold, silver and valuable goods for the sake of security. Thus, the private moneylenders can be taken as forerunner of the concept of financial in-

stitution.

However, the private money lenders supported the economic development of a country, the transactions undertaken by them was totally based on their personal understanding. No legal restriction was against them and their monopolies in transactions were the reasons for covering the interest in personal understandings and exploiting the people.

Thus, it was then realized the need to establish financial intermediaries in supporting the economic development of a country.

Nepal has been ruled over by many rulers like Kirati, Lichchhavi, Malla, Ranas, and Shahs. Mostly Kirati, Lichchhvi and Malla regimes, who were concerned with the construction of temples, pati-pouwa, chautaris, etc. At that period neither the people nor the government needed to think about the economic development of the country.

According to ancient “Vanshawali” in fourteenth century, the ruler of the then Kathmandu Jayasthiti Malla segregated the local domiciles into 64 different classes according to profession they had undertaken. Tankadhari was one of those classes who used to deal in coins and precious metals such as gold. These Tankadharis were said to have carried out the borrowing and lending of money (coins). Hence, Tankadharis can be regarded as the traditional bankers of Nepal.

After long time, during the Rana regime, only handfuls prime minister thought about the economic development of the country. They established some offices in 1993 BS. Tejarath Adda was established during the tenure of Prime Minister Ranodip Singh Rana as a first institutionalized credit house. Tejarath Adda provided loans under the security of gold and silver to the government employees and public. The government established its various branches and sub- branches at

different places of the country for the sake of benefits of people. In the overall development of the banking system in Nepal, the Tejarath Adda may be regarded as the father of modern banking institution and for a quite long time it rendered a good service to the government employees as well as to the general public. The government also implemented the rules against the vast interest rate taken by moneylenders. Thus, the government financial institution occupies an important role in the banking history of Nepal.

No financial institutions were established over a long period due to political reasons. To fulfill the growing need of economy in Nepal, banking activities were performed only after the establishment of Nepal Bank Limited in 1994 BS as the first Commercial Bank in Nepal. This bank was established under the Nepal Bank Act 1994 BS.

At beginning, 49% of the ownership belongs to the promoters as well as general public and remaining belongs to government. The incorporation of Nepal Bank Ltd. is the real starting of the banking institution in Nepal. The bank started the act of consolidating the scattered capital since its establishment in order to mobilize it in productive sector. It developed systematic tradition in culture of modern banking system in Nepal. Such system could be able to establish a strong base for the uplift of national economy. Beside, it also acted as Central Bank for more than three decades.

Nepal Rastra Bank was established in Baisakh 14, 2013 BS under Nepal Rastra Bank Act 2012 BS as the Central Bank of Nepal. It is totally owned by government. NRB is heavily assisting for the development of the whole economy. It is giving timely directives to all financial institutions operating and conducting in all over the country.

After a long period, the second commercial bank namely Rastriya Banijya Bank (RBB) has been established in 2022 B.S. with cent percent government owner-

ship. This bank has been established under the Rastriya Banijya Bank Act 2021 B.S. Both Nepal Bank Ltd (NBL) and Rastriya Banijya Bank (RBB) have made a remarkable contribution by providing reliable banking services to the Nepalese people. Its contribution is well noted on terms of capital formation to the small dispersed saving into meaningful capital investment in order to flourish industry, agriculture, and commercial sector in the country.

The government introduced Commercial Bank Act in Nepal in 2033 B.S. to cover the vast field of financial sector. This act has helped to emerge number of commercial bank with a view to maintain the economic interest in comfort of the public in general facilitated to provide loan for agriculture, industry, and trade and make a available banking services to the country and people.

Along vacuum in the banking sector got some rays of hope only when the government forwarded the economic liberalization policy in 2039 B.S and decided to allow foreign banks to operate their activities in Nepal in joint-venture model. Joint-venture Banks can be defined as an association of two or more parties having common objectives and goals so as to get maximum satisfaction. Basically at that time, it was envisioned that Joint-venture Banks (JVBS) would support the country in various ways.

In Nepalese context the main purpose of joint venture is top developing economic forces in order to achieve distinguished result, which the partners separately could not achieve. Nowadays, Joint-venture Banks (JVBS) are playing dynamic and vital role in economic development of the country.

The Nabil Bank Ltd is the first Joint-venture Bank established in 2041 B.S. and started its operation with modern banking services. In the same way, Nepal Indosuez Bank (currently Nepal Investment Bank), the second joint-venture bank established in 2042 B.S. with an objective to encourage efficient banking services and facilities. Likewise Standard Chartered Bank Nepal Limited is operated in the

year 1987.

With the satisfactory result of Joint-venture Banks, Nepalese promoters are highly encouraged and as a result, commercial banks are introduced with cent per cent domestic investment. At present, Nepal Industrial and Commercial Bank (NIC), Lumbini Bank Ltd., Machhapuchhre Bank Ltd., Kumari Bank Ltd, Laxmi Bank Ltd, Siddhartha Bank Ltd., Bank of Kathmandu, Nepal Credit and Commerce Bank Ltd., came into operation with cent percent domestic investment by Nepalese promoters which is the plus point of development of banking sector of Nepal. Now, there is a strong competition between commercial banks for their existence so that the growing needs of the customers can easily be achieved.

2.2 Definition of Loan and Advances

Loan is defined as a sum of money transferred to another for temporary use, to be repaid with or without interest according to terms of the loan agreement written in the accompanying bond, note, mortgage or other document of indebtedness. However, in financial terms loan or debt means principal or interest availed of to the borrower against the security. Debt means the money that bank owes or lends to individual or person.

Likewise, the term loan is defined as a lending, a sum of money, Delivery by one party and receipt by another party upon agreement expressed to implied, to repay it with or without interest (Boerne Vs. Colwell Co.1997). Any thing furnished for temporary use to a person at his request on condition that it shall be returned, or it's equivalent in kind, with or without compensation for its use. Loan includes:

- The creation of debt by the lender's payment of or agreement to pay money to the debtor or to a third party for the account of the debtor.
- The creation of debt by a credit to an account with the lender upon which the debtor is entitled to draw immediately.

- The creation of debt pursuant to a lender credit card or similar arrangement.

Further, debt means „Principal and interest provided to debtor by banks or financial institutions, with or without the pledge of immovable or movable property or other securities or guarantees or without guarantee, and the word also mean over dues of the transactions beyond balance or fees, commission and interest incurred in that relation (Debt Recovery 2058 Act.79).

The supreme court of India has defined the debt during the decision of the case of United Bank of India Vs. DRT. Sudhir Gupta states that "In the case in hand, there cannot be any dispute that the expression debt has to be given the widest amplitude to mean any liability which is alleged as dues from any person by a bank during the course of any business activities undertaken by the bank either in cash or otherwise, whether secured or unsecured, whether payable under a decree or order of any court or otherwise and legally recoverable on the date of the application" (Ghimire, 2005).

To define NPA first of all meaning of Assets should be understood. Assets mean the property of a person or a company. This indicates that assets are the property of a company accumulated with the help of sources.

2.3 Definition of NPA

Non Performing Loan means an outstanding loan that is not repaid, i.e. neither payments of interest, or principle are made. In case of the banks the loans and advanced are the assets as the banks flow loans from the funds generated through shareholders equity, money deposited by the people and fund having through the borrowings, Hence the term NPA means the loans and advances that are not performing well. Thus all the irregular and/or overdue loans and advances

can be termed as NPA (Ghimire, 2005).

2.4 Classification of NPA

As per NRB directives 2058 the NPA of bank is classified as below:

2.4.1 Pass

Loans or assets in this category are fully protected by the current sound worth and paying capacity of the obligor or the collateral pledged, are performing in accordance with contractual terms, and are expected to continue doing so.

- Any asset which is past due period up to 90 days shall be classified as Pass.

2.4.2 Substandard

Loans or assets in this category are not adequately protected by the current sound worth and paying capacity of the obligor. The primary source of repayment is not sufficient to service the debt, and the financial institution must rely on secondary sources such as realizing on collateral, sale of fixed assets, refinancing, or capital injections from external sources. Substandard assets have well-defined weaknesses that jeopardize the orderly repayment of the debt. These assets may, or may not, be past due but have a higher than normal risk due to absence of current credit documentation. There is a distinct possibility that the financial institution will sustain loss if deficiencies are not corrected.

- Any asset which is past due 90 days or more but less than 180 days shall be classified as Substandard, at a minimum.
- Re-negotiated and restructured loans shall be graded Substandard unless
 - i. All past due interest is paid in cash at the time of restructuring,
 - ii. All principal and interest payments have been made according to the modified repayment schedule for at least six consecutive months from the date the loan was re-structured, and
 - iii. The terms and conditions of the restructured loan comply with the loan

policy.

2.4.3 Doubtful

Loans and assets in this category have all the weaknesses inherent in substandard assets but the loans are not well-secured. Weaknesses make collection in full highly questionable and improbable on the basis of existing facts, conditions, and value. The possibility of loss is high, but the actual amount of loss cannot be fully determined because specific pending factors may mitigate. Pending factors may include a merger, acquisition, or liquidation; a capital injection; obtaining additional collateral; or refinancing. If pending events do not occur within 180 days and repayment must again be deferred, Loss classification is warranted.

- Any asset which is past due 180 days or more but less than 360 days shall be classified as Doubtful, unless
 - i. The asset is well-secured,
 - ii. Legal action has commenced, and
 - iii. The time to realize on collateral or on a guarantee does not exceed 180 days.

2.4.4 Loss

Loans and assets in this category are deemed uncollectible or of such little value that carrying on the books is no longer warranted. Loss classification does not mean there will never be a recovery, but rather that it is no longer appropriate to defer writing off the asset. Losses shall be taken when identified as uncollectible and shall not remain on the books while pursuing long-term recovery efforts.

- Any asset which is past due 360 days or more shall be classified as Loss, unless
 - i. The asset is well-secured,
 - ii. Legal action has commenced, and

- iii. The time to realize on collateral or on a guarantee does not exceed 180 days. In some cases, a reduced carrying value or partial write-down is justified. If a partial write-down is taken, the remaining book value must be supported by tangible facts.

Furthermore the provision made for the NPA according to their classification is as below:

Table 2.1

Classification of Loan and Advances

Classification of Loans and Advances	Criteria for Provisioning	Provision Rate
Pass	Not past due and past due for a period up to 3 months. [Performing loans]	1%
Substandard	Past due for a period of 3 months to 6 months	25%
Doubtful	Past due for a period of 6 months to 1 year	50%
Loss	Past due for a period of more than 1 year or advance which have least possibility of recovery	100%

Source: Nepal Rastra Bank, Directives for Commercial Banks 2058

Effects of NPA on Profitability of the Banks

Under the circumstances assets that do not earn any income to the bank affect the profits in a number of ways, which are explained as follows:

Profitability Impact:

- The resources locked up in NPA are borrowed at a cost and have to earn a minimum return to service this cost.
- NPA on the one hand do not earn any income but on the other hand drain the profits earned by performing assets through the claim on provisioning requirements.
- Since they do not earn interest they bring down the yield on advances and the net interest margin or spread.
- NPA have a direct impact on assets and return on equity, the two main parameters for measuring profitability of the Commercial Banks.

- Return on assets will be affected because while the total assets include the NPA they do not contribute to profits which are the numerator in the ratio
- Return on equity is also affected as provisioning eats more and more into profits earned.
- The cost of maintaining these include administration costs, legal costs and cost of procuring the resources locked in them.
- NPA bring down the profits, affects the shareholders value and thus, adversely affect the investor confidence.

As a whole, his impact of NPA can be assessed with the following:

- Lower ROE and ROA.
- Lower image and rating of Banks,
- Disclosure reduces investor's confidences.
- Increases costs/difficulties in raising capital.
- NPA do not generate income.
- They require provisioning.
- Borrowing cost of resources locked in.
- Opportunity cost due to non-recycling of fund.
- 100% risk weight on net NPA for CRR.
- Capital gets blocked in NPA.
- Utilizes capital but does not generate income to sustain the capital that is locked.
- Recapitalization by government comes with string.
- Administration and recovery costs of NPA.
- Effects in employee morale and decision-making (Ghimire,2005).

2.5 Review of the Previous Studies

Books, journals and publications have been studied to formulate ideas about the subject matter. Although, the specific books regarding the NPA could not be found,

however, a related book has been consulted such as (Tannans Banking Law and Practices in India.1997). Assessing the gravity of the problem, Tannan found that the Banks and Financial Institutions at present face considerable difficulties in recovery of dues from the clients and a significant portion of the funds of the banks and financial institutions is thus, blocked in unproductive assets.

In India for addressing the question of speeding up the process of recovery was examined in great detail by committee set-up by the government under the chairmanship of the Late Shri Dutta Tiwari.

Suneja,(1992) pointed out the causes of NPA that the risk connected with lending to business depends on an enormous number of factors. For any particular type of business the risk failure is affected.

The state of economy trend in demand for the product or service provided competition from any other suppliers, financial resources are too limited and management skills are lacking. Reiterating the difficulties that Suneja says probably the most difficult decision facing a banker is to determine when it becomes necessary to recall a loan and to begin the process of liquidating the security. Further she suggests that if a customer fails to make repayment on the due date, the bank has to consider what steps need be taken to recover the debt.

Basyal, (2057) discussing the financial performance of government owned banks agreed that the disappointing performance of these two banks has become serious concern to all the stakeholders. Further he mentions that they are having huge level of NPA, which could be termed as the darkest sides of their operational inefficiency and undisciplined financial behaviors.

Ghimire, (2056) has made a comparative analysis and found that efficiency indicator of the banks may be viewed on the basis of amount allocated for loan loss provisioning against loan and investment.

Pradhan, (2058) expressed that unless the growth of NPA is kept in control, it has the potential to cause systematic crisis. He has mentioned that a dream of globalization led to huge investment which unfortunately could not be utilized properly due to hesitant liberalization policies. Large corporate bodies misused the credits and delayed payments and contributed indirectly for enhancing NPA ratio. He further argues that lack of vision in appraisal of proposal while loan sanctioning, reviewing or enhancing credit limits, absence of risk management policy of financing, concentration of credit in few group or parties and sector, lack of coordination among various financiers, lack of initiatives to take timely action against willful defaulters, indecision on existing out of bad loans for fear of investigating agencies like special police, CIAA, Public Accounts Committee of the parliament have also contributed in whatsoever measures to the worsening situation of NPA front. He further pointed out that most crucial reason for the increase in the NPA is the shabby and defaulter friendly legal system. Suggesting the remedy of NPA, he adds that administrative system should be strengthened. Legal reforms should be made and Assets Reconstruction Company should be formed. Henderson (2003) CEO of RBB during his interview to New Business Age agrees that the challenging target of RBB turn around in restructuring and collation of NPA.

Khadka,(2004) has explained about the topics in which he had objectives to study and examine the level of NPAs in total assets, total deposits and total lending of commercial banks. He also had studied whether the Nepalese Commercial

Banks have been following the directives of NRB regarding loan loss provision

for non-performing loan/ assets or not. He had taken sample banks as Nepal SBI Bank Limited, Nepal Investment Bank limited, Nepal Bangladesh Bank limited, Bank of Kathmandu limited, Nabil Bank Limited. From his studies, it is found that the level of NPA of Nepal Bangladesh limited seemed greater than all of the other banks under his study. Similarly, Nepal SBI Bank and Bank of Kathmandu stand at second and third position respectively. The position of Nabil Bank limited seemed to be quite satisfactory because, the bank has been reducing its NPA every year. NPA of Nepal Investment Bank stands at minimum than that of all the other banks. From the study it has also been found that none of the banks have been following the directives of NRB regarding the loan loss provision. Despite of high level of NPA the loan loss provision made by the Nepal Bangladesh Bank seemed to be quite satisfactory than any of the other banks. Despite of the outstanding success in managing the NPA the loan loss provision made by Nepal Investment Bank is not considerable. It meant the loan loss provision of Nepal Investment Bank is very less than the requirement.

Shrestha,(2004) revealed that the Standard Chartered Bank Nepal Limited had risk averse attitude of the management or they have policy of investing low in the risky assets i.e. loans and advances as compared to Nepal Bank Limited and Nabil Bank because the loans and advances to total assets ratio of NBL, NABIL and SCBNL during FY 2057/58 to 2061/62 was appeared to be 52.3%, 47% and 29.34% respectively. SCBNL has higher proportion of the investment in risk free or nominally risky assets like treasury bills, National Saving bonds etc.

Similarly, the loans and advances to total deposits ratio of NBL, NABIL and SCBNL during the study period was found to be 57.63%, 56.35% and 35.94%

respectively. It indicates that the SCBNL has the most consistent and variability during the study period whereas the NBL has the higher consistent and variability as compared to other two banks. NABIL has the moderate level of consistent and variability.

In the same way, the proportion of Non Performing loan with regard to total loans of NBL, NABIL and SCBNL was found to be 48.37%, 10.67% and 4.38% respectively. That means 51.63%, 89.33 and 95.62% of the total loan of NBL, NABIL and SCBNL was found to be performing loan. Not only the public sector bank, even private sector bank like NABIL has higher proportion of non-performing loan. However, in recent years NABIL has shown significant decrement in non-performing assets, which are the result of effective bank credit management and its efforts of recovering bad debts through the recovery of establishment of recovery cell.

Proportion of loan loss provision of NBL was found to be significantly higher i.e. 40.17% as compared to other two commercial banks. The proportion of NABIL and SCBNL was found to be 5.69% and 4.49%.

The average ratio of provision held to non performing loan of NBL, NABIL and SCBNL was found to be 80.03%, 57.85% and 122.32% respectively shows that the SCBNL has maintained adequate level of provision against non performing loan where as NABIL was found to be comparatively lower. The NBL was found to be an average position.

Ghimire, (2005) studied about the internal and the external factors that affect the non- performing assets to increase from the loan and advances. The internal factors that influence and the effective management of the NPA and its increment. The objective of his studies is also to find out the relationship between the non-banking assets and the Non-Performing Assets, in which he was able to find

out very much important result from the survey. The study was able to find out the internal responsible factors that contribute turning good loan into bad loans, bad intention, weak monitoring and miss management are the most responsible factors. Similarly, weak legal provision and credit concentration are also found as the least preferred factors in turning good loans into bad loans. Some factors such as lack of portfolio analysis, not having effective credit policy and shortfall on security were identified as having average effect on NPA growth. In connection to the external factors it has been found that recession, political and legal issues are more relevant factors in turning good loans into bad one. Like wise legal provision for recovery as a reason for increment in NPA in Nepalese Banks have been found the factors having less impact. Supervision and monitoring system have been identified as average factors. It is therefore, can be generalized that economic and industrial recession and not having strong legal provision for loan recovery are the major external factors that have major contribution for the increment of NPA.

It has also been concluded in the study that Nepalese Commercial Banks gave must priority to trade sector for lending its resources, at the same time it is found that service sectors are not being given that much emphasis. He had recommended to the sample banks, Nepal Bangladesh Bank Ltd, Nepal SBI Bank Ltd, and Bank of Kathmandu Ltd, as on different headings, subject matter such as financial strength, personal integrity and security, monitoring and control system, avoidance of credit concentration, strong legal system, assets management company, avoidance of undue pressure, etc.

2.6 Research Gap

NPA management is such a delicate topic for any banks and financial institution. NPA has been the reason of increased in the loss and decrease in profit of any

banks. NPA management can lead to obvious profits but much more pertinently to growth.

The research conducted could not explain the relation of NPA to the Total Lending. Beside it also did not show the relationship on NPA and the NPA of population banks of the country.

This research has tried to study the effect of NPA on the profitability of the six banks on the country i.e. NABIL, SCBNL, HBL, NIBL, BOK and NBBL. How do increase in the NPA related to the Total lending, Total Deposits, Total Assets and Net profit of the bank. Effort here is to shed light on the delicate and judicious planning and execution of NPA management, which banks have to carry out for its growth. The hypothetical test of NPA on Total Lending and NPA of the population bank is also performed to deepen the study.

In this regards, previously performed NPA analysis has been referred to as precedence and this research has endeavored to intensively analyze the effect of NPA in commercial banks on its profitability.

CHAPTER - III

RESEARCH METHODOLOGY

Research methodology is the way to solve systematically about the research problem. It is composed of two words, search and methodology which means the process of investigating in values a series of well thought and activates in gathering, recording, analyzing and interpreting the data with the purpose of finding answers to the problem. The entire process by which we attempt to solve the problem is called research while methodology is the method used to list the hypothesis.

“Research design is the plan, structure and strategy of investigation conceived so as to obtain answer to research questions and to control variances. The plan is the overall scheme or program of the research” (Kerlinger, 1986).

For this study, both field and desk research has been adopted. The fieldwork has been conducted to collect necessary information and published documents from the experts and officials concerned, while deskwork has been conducted to analyze and interpret the information so collected. In order to make the report meaningful and purposeful the following procedural methodology will have been adopted.

3.1 Research Design

Research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance (kerlinger, 1983). Research design is the conceptual structure within which a research is conducted; it constitutes the blue print for the collection, measurement, and analysis of data (Ko-

(Kothari, 1990) this study attempts to analyze the primary data as well as secondary data. This study is carried out to get the empirical result of the behavior of Nepal Stock Exchange index, to conduct the study, descriptive analytical research has been adopted. Descriptive is utilizing for conceptualization, problem identification, conclusion, and suggestion for the research. In this research, design is based on technical analysis approach.

3.2 Populations and Sample

The population of the study is the total numbers of commercial banks that is 31 banks. And the samples of 6 banks are taken from this population on random sampling basis.

The population of the present study is listed as under, the commercial banks operating in the banking industry of Nepal.

Table 3.1
List of Commercial Banks in Nepal

S.N	Names	Operation date(A.D.)	Head Office	Paid up Capital (Rs. In millions)
1	Nepal Bank Limited	1937/11/15	Kathmandu	380.40
2	Rastriya Banijya Bank	1966/01/23	Kathmandu	1172.30
3	ADB Ltd.	1968/01/02	Kathmandu	10777.50
4	NABIL Bank Limited	1984/07/16	Kathmandu	965.75
5	NIB Limited	1986/02/27	Kathmandu	2407.10
6	SCB Nepal Limited.	1987/01/30	Kathmandu	932.00
7	Himalayan Bank Limited	1993/01/18	Kathmandu	1216.20
8	Nepal SBI Bank Limited	1993/07/07	Kathmandu	874.50
9	NB Bank Limited	05/06/1994	Kathmandu	1822.70
10	Everest Bank Limited	1994/10/18	Kathmandu	838.80
11	Bank of Kathmandu Limited	1995/03/12	Kathmandu	844.40
12	NCC Bank Limited	1996/10/14	Rupendehi	1399.50
13	Lumbini Bank Limited	1998/07/17	Chitwan	1096.10

14	NIC Bank Limited	1998/07/21	Biaratnagar	1140.50
15	Machhapuchhre Bank Limited	2000/10/03	Pokhara	1479.10
16	Kumari Bank Limited	2001/04/03	Kathmandu	1186.00
17	Laxmi Bank Limited	2002/04/03	Birgunj	1098.10
18	Siddhartha Bank Limited	2002/12/24	Kathmandu	952.20
19	Global Bank Ltd.	2007/01/02	Birgunj	1000.00
20	Citizens Bank International Ltd.	2007/6/21	Kathmandu	1000.00
21	Prime Commercial Bank Ltd	2007/9/24	Kathmandu	700.00
22	Sunrise Bank Ltd.	2007/10/12	Kathmandu	1337.50
23	Bank of Asia Nepal Ltd.	2007/10/12	Kathmandu	1000.00
24	Development Credit Bank Ltd.	2001/01/23	Kathmandu	1655.30
25	NMB Bank Ltd.	1996/11/26	Kathmandu	1424.60
26	Kist Bank Ltd.	2003/02/21	Kathmandu	2000.00
27	Janata Bank ltd.	2010/06/28	Kathmandu	2000.00
28	Megha Bank ltd.	2010/09/17	Kathmandu	2330.00
29	Commerz and trust Bank ltd.	2010/09/20	Kathmandu	2000.00
30	Civil Bank Limited	2010/12/15	Kathmandu	2000.00
31	Century Commercial Bank	2011/03/10	Kathmandu	2000.00

Source: www.nrb.org.com / notification

The following are the banks are selected as sample for the study.

- Nabil Bank Limited
- Standard Chartered Bank Nepal Limited
- Himalayan Bank Limited
- Nepal Investment Bank Limited
- Bank of Kathmandu Limited
- Nepal Bangladesh Bank Limited

Nabil Bank Limited

Nabil Bank the first foreign joint venture commercial bank of Nepal was established in 11 May 1984 under the company Act 1964. It started banking work in

the same year by joint investment of Dubai Bank Limited and Nepalese promoters. The authorized share capital of the bank was Rs. 50 Million and paid up capital and issued capital of Rs. 30 Million at the time of establishment Share holding pattern of the bank was as follows:

Dubai Bank Ltd.	50%
NIDC	10%
National Insurance Corporation	9.68%
Nepal Stock Exchange Ltd.	0.32%
General Public	30%

Nabil Bank provides full range of commercial banking services through its 32 points of representation across the kingdom and over 24 ATM locations around the valley and 18 outside the valley.

Operations of the bank including day-to-day operations and risk management are managed by highly qualified and experienced management team. Bank is fully equipped with modern technology, which includes ATMs, credit cards, state of art world renowned software from Infosys Technologies System, Bangalore, India, Internet banking system and Tele banking system.

Standard Chartered Bank Nepal Limited

Standard Chartered Bank Nepal Limited was established on 30th January 1987 with 15% share of general public, 35% of NBL and 50% of Grindlays Bank Ltd. It is one of the leading banks of Nepal.

It has 14 branches around the country and 4 extended counters. The bank is operating 12 ATMs inside the valley and 7 more outside the valley. The bank provides the services like Deposits, Cards, Loans, Priority Banking, Insurance, ATM, Online Banking, Safe Deposits Lockers, Remittance, etc.

Himalayan Bank Limited

HBL was incorporated in 1992 by a few distinguished Business personality of Nepal in partnership with employees of Provident Fund and Habib Bank Ltd., one of the largest Commercial Banks of Pakistan. Banking operation commenced from January 1993. It is the first Commercial Bank of Nepal whose maximum shares are held by the Nepales private sector.

Share holding pattern of the Bank was as follows:

Habib Bank of Pakistan	20%
Nepalese Promoter	80%

Himalayan Bank lives on in an institution that's known throughout Nepal for its innovative approaches to merchandising and customer service. Products such as Premium Savings Account, HBL Proprietary Card and Millionaire Deposit Scheme besides services such as ATMs and Tele-banking were first introduced by HBL. Other financial institutions in the country have been following their lead by introducing similar products and services. HBL very recently introduced several new products and services. Millionaire Deposit Scheme, Small Business Enterprises Loan, Pre-paid Visa Card, International Travel Quota Credit Card, Consumer Finance through Credit Card and onlineBanking.

The bank has 18 branches running in the country and has already press released the addition of 4 new branches in different part of Nepal.

Nepal Investment Bank Limited

Under the company Act 1964, NIBL was established on 21 January 1986. In the beginning Banque Indosuez, Paris has held 60% of the total number of shares, 20% by Nepalese promoters and remaining 20% by general public of Nepal. Now the bank has 30 branches operating around the country. The main branch of this bank is located at Durbar Marg. Deposits, e Banking, Premier Banking,

ATM, NTC mobile bill payment, Loan and Advances, Cards, Safety deposit locker are some the services that the bank is being providing.

Bank of Kathmandu Limited

BOK started its operation in March 1995 with the share capital of 45% of the local promoters, 30% of Siam Commercial Bank of Thailand and 25% of the general Public. But Siam Commercial Bank doesn't hold any share now.

The current share pattern of the bank is as follows:

Nepalese Promoters	97.70
Financial Institutions	2.07%
Others	0.23%

BOK has altogether 29 branches operating throughout the country and it has 37 ATMs working inside the valley and 11 ATMs working outside the valley. The Deposits, Loans and Advances, International Trades, Global Banking Solution and Debit Cards, ATMs, etc. are the services provided by the bank.

Nepal Bangladesh Bank Limited

NBBL was established in June 1994 with an authorized Capital of Rs. 240 Million and paid up capital of Rs.60 million as a Joint Venture Bank with IFIC Bank Ltd. of Bangladesh. Its head office is situated at New Baneshwor, Kathmandu.

The primary objectives of the bank is to render banking services to the different sectors like, industries, trade, businessmen, priority sectors, small entrepreneurs, and weaker section of the society and every other people who needs banking services. During the period of 15 years of its operation, it has accommodated a large number of clients and has been able to provide good services to its clients.

With network of 17 branches and corporate offices, the bank commands the largest network amongst the joint venture commercial banks in Nepal. Top Exporters and Importers of the country have established banking relationship with the bank with a substantial volume of foreign business which has enhanced the bank's popularity in the international trade front. Bank has developed Agency and Correspondent relationship with more than 200 prominent Foreign Banks in the world.

The NPA level of NIBL and SCBNL are in good, i.e. 0.6% and 0.7% respectively and where as the NPA level of NBBL is 19.30% highest of all having a poor health. The NPA of NABIL, BOK and HBL are 0.8%, 1.30% and 2.20% respectively, which are moderate of all. In other to get the variation in study and distinction in the results these banks are selected among the 31 other banks.

3.3 Sources of Information

The main sources of information are the concerned banks and their published documents, NRB and its published documents, experts' views, newspapers, and many other published and unpublished documents and many others if possible. The major sources of data may be the secondary sources of data are the information received from the books, journals, newspapers, published reports and dissertations etc. The major sources of secondary data are:

- Economic survey, HMG Ministry of Finance.
- Nepal Rastra Bank directives
- Nepal Rastra Bank Samachar
- Annual general reports of the concerned Commercial Banks.
- National and international newspaper, journals, magazines etc.
- And many other books as far as possible.
- Different web sites.

3.4 Data Presentation and Analysis

Presentation and the analysis of the available data is the major task of the study. The methods of analysis are applied as simple as possible so that it can be understood by the nonprofessionals and the students. Every result is tabulated and clear interpretations on it are given simultaneously. Data are presented in tabular, graphical and chart wherever necessary and possible. Summary and conclusions as well as recommendations are presented.

3.5 Data Analysis Tools

It is fact that collected data should properly be analyzed to overcome the solution of research problems. For this purpose, both financial and statistical tools have been used in this study. The used various financial and statistical tools are briefly described in below.

3.5.1 Financial Tools

Ratio Analysis

The ratio analysis involves comparison for a useful interpretation of financial statements. The quantities judgment regarding Non-performing Assets of firm can be done with the help of ratio analysis. It is the most effective tool of financial analysis. A ratio simply shows the relationship between the two variables or one another presents the relative strengths and weaknesses of any firm or organization. It also shows the financial growth of the organization and financial performances of the organizations. It summaries the financial figure and make quantitative judgment of financial performance and position. The relationship between two accounting figure expressed mathematically is known as financial ratio. To make analysis, we can use various ratios. But only those ratio have been calculated which are related to the subject matter.

- **Non-Performing Assets to Total Lending Ratio**

Non-Performing Assets to Total Lending Ratio determines the non-performing assets in the total loan advances portfolio. Greater ratio implies the bad quality of loan of the bank. Hence lower non-performing assets to loan and advance ratio is preferable. As per international standard only 5% NPA is allowed but in the context of Nepal 10%NPA is applicable. It is calculated as under:

$$\text{NPA to Total Lending Ratio} = \frac{\text{Non - Performing Loan}}{\text{Total Loan and Advance}}$$

- **Total Lending to Total Deposits Ratio**

The main objectives of bank are to make deposit and lend it in the secured field. Total lending to total deposit shows the relationship between the loan and advanced and total deposit. It shows how much fund of deposit is provided as loan and advanced. This ratio is used to find out how successfully the banks are utilizing their deposits fund on credit or loan for profit generating purpose as loan and advanced yield high return. Higher CD ratio implies the better utilization total deposit and better earning. Hence 70% to 80% CD ratio is considered as more appropriate. This ratio can be calculated as:

$$\text{Total lending to total deposit Ratio} = \frac{\text{Total Lending}}{\text{Total Deposit}}$$

- **Net profit to total assets Ratio**

The ratio of Net Profit to total assets measure the volume of net profit and total assets of the banks. The higher degree of ratio indicates the good performance. In the positive side, lower degree of Ratio represents lower performance. The ratio can be calculated as follows:

$$\text{Net profit to Total assets ratio} = \frac{\text{Net Profit}}{\text{Total Assets}}$$

3.5.2 Statistical Tools

Statistical tools such as arithmetic mean, coefficient of correlation and probable errors the main tools applied in this study. Other statistical tools are also applied where necessary.

Mean

Mean of a set of observations is the sum of all the observations divided by the number of observations.

$$\bar{X} = \frac{\sum X}{N} \text{ or,}$$

$$\bar{X} = \frac{x_1 + x_2 + \dots + x_n}{n}$$

Where,

\bar{X} = Arithmetic Mean

$\sum x$ = Sum of all the values of the variables

x_1 = First Observation (i.e. variable)

x_2 = Second Observation

x = Last Observation

N = Number of Observation

Correlation

The degree of relationship between the variable under consideration is measured through the correlation. The measure of correlation called correlation coefficient or correlation index summarizes in one figure the direction and degree of correlation. The correlation analysis refers to the technique used in measuring the closeness of the relationship between variables. Karl Pearson's coefficient of correlation is widely used in practiced to measure the degree of relationship between two variables. Therefore Pearson's technique is used under.

$$r = \frac{n \sum XY - \sum X \times \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

Where,

$\sum y^2$ = Sum of all the values of the variables

$\sum Y^2$ = Total sum of the square of variable in Y series.

$\sum XY^2$ = Total sum of the product of variable in X and Y series.

$\sum X$ = Total sum of x variables

$\sum Y$ = Total sum of Y variables

N = Number of variables paired.

r = Correlation Coefficient.

The value of correlation coefficient always lies between +1 to -1. If $r = +1$, it means there is perfect positive relationship between two variables. If $r = -1$, it means there is perfect negative relationship between two variables. If $r = 0$, it means there is no any relationship between two variables.

Probable Error

Probable error is an old measure of ascertaining the reliability of the value Pearsonian coefficient of correlation. It may be used to test if calculated value of sample correlation coefficient is significant or insignificant. If $r < P.E. (r)$, then the value of r is not at all significant and if $r < 6PE (r)$, then r is deficiently significant. PE (r) can be calculated as follows:

$$PE (r) = 0.6745 \times \frac{(1 - r^2)}{\sqrt{n}}$$

Test of Hypothesis

The main objective of this test is to test the significance regarding the parameters of the population on the basis of sample drawn from the population. In this study

the following hypothesis is set:

a. Test of hypothesis between NPA and Total Lending of the Banks:

Is there any significant relation between total lending of commercial banks and the amount of the Non-Performing Assets?

Null Hypothesis, H_0 : $\rho=0$, i.e. there is not any significant relation between total lending of commercial banks and the amount of the Non-Performing Assets.

Alternative hypothesis, H_1 : $\rho \neq 0$, i.e. there is significant relation between total lending of commercial bank and the amount of the Non-Performing Assets.

Where,

\bar{X} = Mean NPA of Bank

\bar{Y} = Mean of Total Lending of Bank

Here using the notification often use in testing the hypothesis

$$S = \sqrt{\frac{\sum(X-\bar{X})^2 + \sum(Y-\bar{Y})^2}{n_1 + n_2 - 2}}$$

Then,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

b. Test of hypothesis between NPA of the Bank and the population:

Is there any significant relationship between the amount of Non-Performing Assets of sample banks and the population?

Null hypothesis, H_0 : $\rho=0$, i.e. there is not any significant relationship between the amount of Non-Performing Assets of sample banks and the population.

Alternative hypothesis, H_1 : $\rho \neq 0$, i.e. there is significant relationship between the amount of Non-Performing Assets of sample banks and the population.

Here,

\bar{X} = Mean NPA of Sample Bank

\bar{Y} = Mean NPA of Population Banks

Where,

Here using the notation often use in testing the hypothesis

$$S = \sqrt{\frac{\sum(X-\bar{X})^2 + \sum(Y-\bar{Y})^2}{n_1 + n_2 - 2}}$$

Then,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

CHAPTER - IV

DATA PRESENTATION AND ANALYSIS

In this chapter, efforts have been made to present and analyze the collected data. Data collected from various sources were classified and tabulated as required. Data are presented in the tables and figures. Different arithmetical and statistical tools are used to analyze the data to make easier and make clearer to the understanding of the study.

Simple percentage is used to analyze the data as arithmetical tools. Karl Pearsons correlation coefficient is also used to analyze the data.

Nowadays Non-Performing Assets [NPAs] have been occupying major space in the total assets and total loan/lending of the bank. It stands around 6% in the Nepalese banking sector. The total NPA in the banking system is about Rs. 19 billion, while it is even worse in case of two large commercial banks, RBB and NBL. The NPA of RBB is 21.65% while that of NBL is 31.10% of the total lending in FY 2065/66. In this way we can say that commercial banks have been suffering by high level of NPA, and the efforts of the banks have been diverted to reduce it.

Keeping this fact into consideration, a provision has been set up by Nepal Rastra Bank to control the level of NPA of Nepalese Commercial Banks in FY 2057/58. According to that provision, every bank has to classify its total loan and advances [including purchased and discounted bills] as pass loan, substandard loan, doubtful loan and bad loan, on the basis of overdue aging schedule. Commercial Banks are also directed to maintain loan loss provision as stated in section 11 of directives No. 2 of NRBs directives

for Commercial Banks 2059. Main purpose was to find out the level of NPA in Nepalese Commercial Banks and to take necessary steps to control the level in future.

Data of five FY starting from FY 2060/61 to 2064/65 have been presented to analyze the level of NPA in total assets, total lending and total deposits of the commercial banks. Data are also presented to analyze the effects to NPA on the profitability of the banks under the study.

4.1 Data Presentation and Analysis of Sample Banks

a) NABIL Bank Limited

Table 4.1

Relation Between NPA, Net Profit, Total Lending and Total Deposit (NABIL)

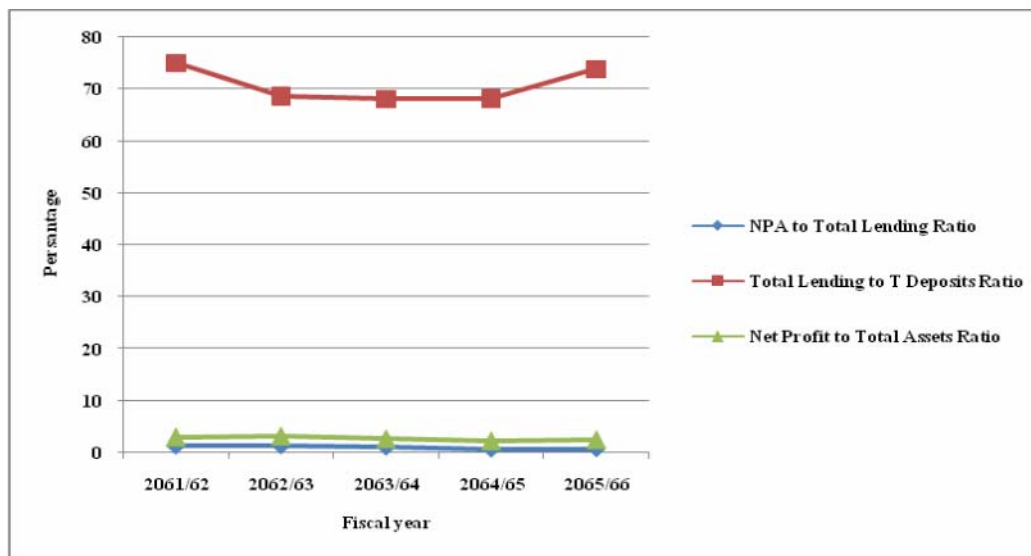
Ratios/Year	2061/62	2062/63	2063/64	2064/65	2065/66
NPA to Total Lending Ratio	1.32	1.38	1.12	0.74	0.80
Total Lending to T Deposits Ratio	75.05	68.63	68.13	86.18	73.87
Net Profit to Total Assets Ratio	3.06	3.23	2.72	2.32	2.55

Source: Annual Reports of FY 2061/62-2065/66

From the above table, it can be said that the ratio between the Non-Performing lending is decreasing during the year under the study. It is at 1.32 % for the FY2061/62 which is decreased to 0.80 % at the end of FY 2065/66. Similarly, the total lending to total deposits ratio is also following the decreasing trend, although it has increased to 73.87% for the year 2065/66, which has decreased to 68.13 % at the year ended 2064/65, showing a sign of decrease in the lending of the bank. And the net profit to total assets ratio is also has decreased, except FY 2062/63 which increased to 3.23% but till the year 2065/66 it has decreased to 2.55%. It shows decreasing trend in the profit in comparison to the total assets of the organization.

Figure 4.1

Trend Analysis of Level of NPA, ROA & Loan-Deposit Ratio (NABIL)



The above figure shows that the total lending to total deposits ratio is above 70% for the FY 2061/62 that decreased in the FY 2062/63. After that it is following the decreasing trend and has reached to around 68.13% in the FY 2063/64. Then it is slightly increased and reached up to 73.87% in the FY 65/66. The NPA to total lending ratio has increased in the FY 2062/63 than, gradually decreased in the FY 2063/64 till the FY 2065/66 which shows that the efforts of the bank to manage the NPA is satisfactory. Similarly, the net profit to total assets ratio has also gradually decreased except in the FY 2062/63.

Table 4.2

Total Assets, Total Deposits, Total Lending and Total NPA (NABIL)

(in million)

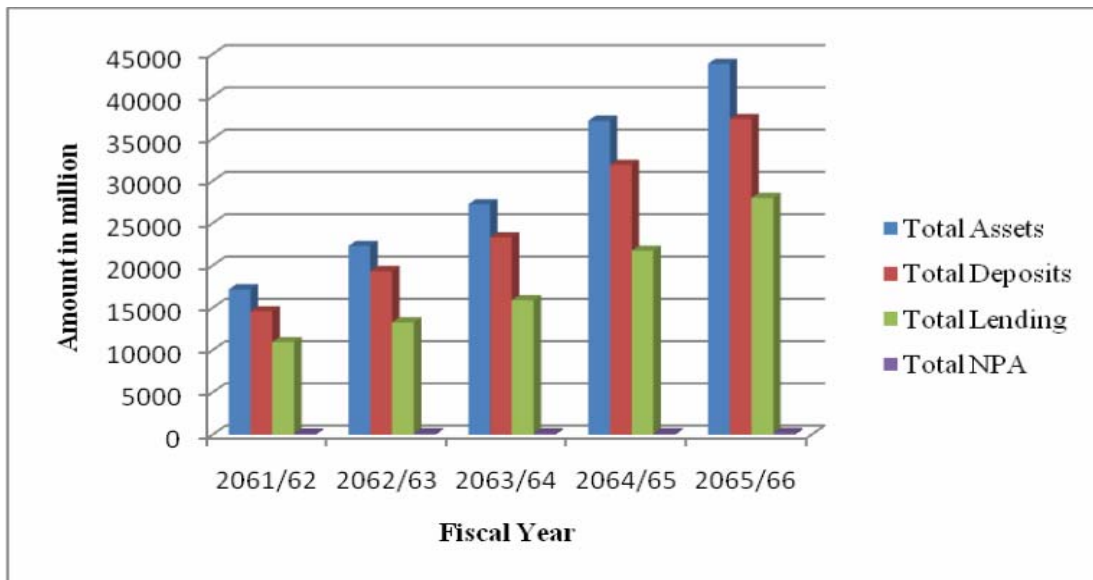
Fiscal Year	Total Assets	Total Deposits	Total Lending	Total NPA
2061/62	17187	1458	10946	144
2062/63	22330	1934	13278	183
2063/64	27253	2334	15903	178
2064/65	37133	3191	21759	161
2065/66	43867	3734	27999	224

Source: Annual Reports of FY 2061/62-2065/66

From the above table, we can clearly find that the total assets of the bank have followed increasing trend. The total asset of the bank is Rs. 17187 millions in FY 2061/62 which has increased to Rs.43867 millions in FY 2065/66 showing the increasing trend. The total deposit is, as it has increased from Rs 14586 million in the FY 2061/62 to Rs. 37348 million in the FY 2065/66. Similarly, total lending is also increasing, which has increased from Rs. 10946 million in year 2061/62 to Rs. 27999 million in FY 2065/66. The total Non-Performing Assets is 144 million in the FY2061/62 which has increase to 183 million in the FY 2062/63 than, gradually decreased till the FY 2064/65.In the FY 2065/66 it increased up to 224million. Total NPA of the bank was Rs. 144 million in FY 2061/62 and it is Rs.244 million which shows the increasing trend of it.

Figure 4.2

Graphical Representation of TA, TD, TL and TNPA (NABIL)



It is clear from the above diagram that the bank efforts of reducing the NPA from the total lending has is satisfactory. Level of NPA is diminishing each year; where as the total lending is in increasing trend. The total assets have also followed similar trend in all the years. In case of total deposits, it is clear from the diagram that it in increasing trend.

Table 4.3
Net Profit and Total NPA (NABIL)

(in million)

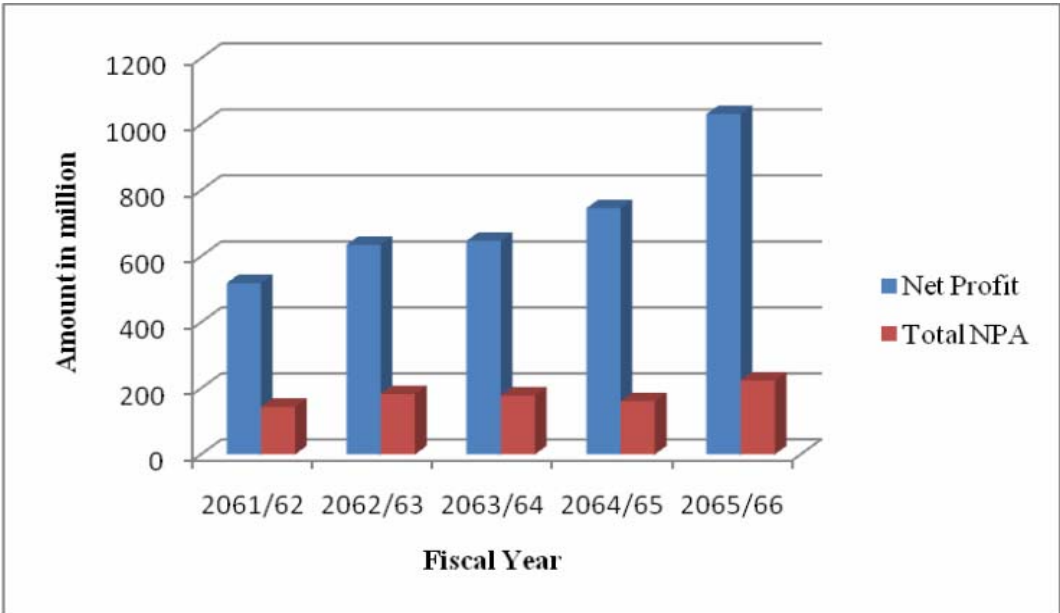
	Net Profit	Total NPA
2061/62	519	144
2062/63	635	183
2063/64	647	178
2064/65	746	161
2065/66	1031	224

Source: Annual Reports of FY 2061/62-2065/66

From the above table, it is clear that the net profit is Rs. 519 million in the FY 2061/062, which has increased to Rs. 1031 million in FY 2065/66. Similarly, the total NPA of the bank also following a good trend, as it has been Rs. 144 million in the FY 2061/62, which has increased to Rs. 224 million in the FY 2065/66.

Figure 4.3

Graphical Representation of Net Profit and TNPA (NABIL)



The above diagram shows that the total profit is at a good level and it is in increasing trend, but where as the NPA is more fluctuating trend. Which has slightly increased or decreased as compared to its previous year. It shows that the workout of the bank in managing the NPA is satisfactory.

b) Standard Chartered Bank Limited

Table 4.4

Relation between NPA, Net Profit, Total Lending and Total Deposits (SCBNL)

Ratios/Year	2061/62	2062/63	2063/64	2064/65	2065/66
NPA to Total Lending Ratio	2.69	2.13	1.83	0.92	0.66
Total Lending to Total Deposits Ratio	43.49	39.92	43.78	46.95	38.70
Net Profit to Total Assets Ratio	2.48	2.56	2.42	2.46	2.53

Source: Annual Reports of FY 2061/62 - 2065/66

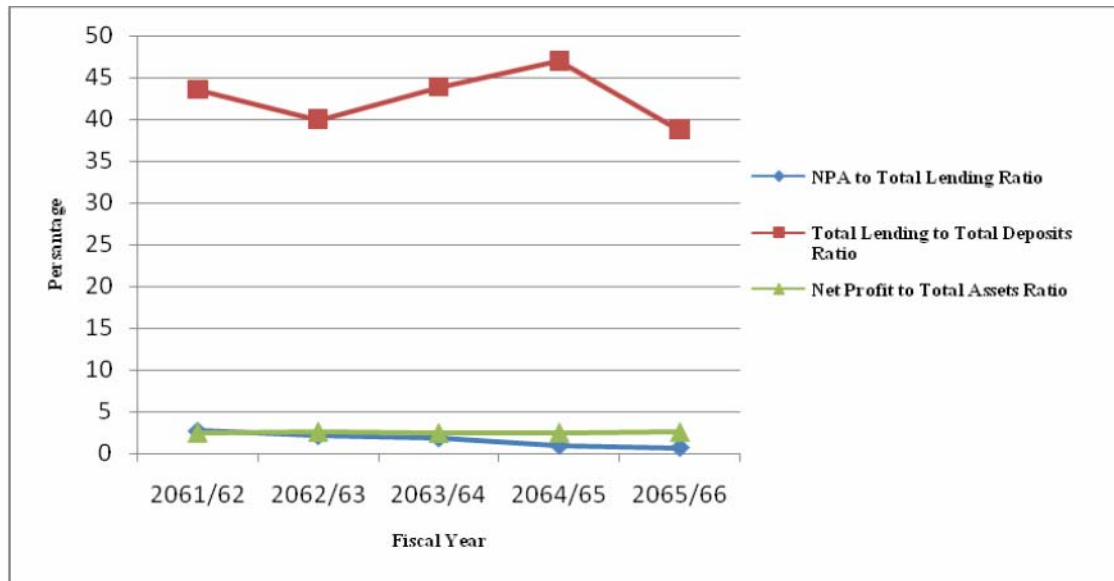
The above table clearly shows that the NPA to the total lending ratio is following the decreasing trend which is 2.69 % in FY 2061/62 and decreased to 0.66% in the FY 065/66.

The total lending to total deposit ratio is satisfactory. It has followed the increasing trend except in the FY 2062/63, which is slightly decreased as compared to the preceding year. In FY 2061/62 it is at 43.49 %, which is increased to 46.95% in the FY 2064/65 than, slightly go down in the FY 2065/66.

Similarly, the net profit to the total assets ratio is also increasing except in FY 2063/64 which was slightly decreased to 2.42% as compared to previous year which was 2.56 %. It is 2.48% in the FY 2061/62 and increased to 2.53% in FY 2065/66.

Figure 4.4

Trend Analysis of Level of NPA, ROA & Loan-Deposit Ratio (SCBNL)



The above diagram shows that the NPA to total lending ratio is in decreasing trend, which indicates the effectiveness in the management of the NPA. It is decreased from 2.48% in the FY 2061/62 to 0.66% in the FY 2064/65.

The total lending to total Deposits ratio is also in the increasing trend. It is gradually increased in the five year period, except in the FY 2062/63 and FY 2065/66 which is slightly decreased as compared to its previous year.

The net profit to the total assets ratio has also followed the increasing trend. It is around 2.48% in the FY 2061/62, which has increased in the following years, showing the improvement in the profit of the bank.

Table 4.5

Total Assets, Total Deposits, Total Lending and Total NPA (SCBNL)

(in million)

Fiscal Year	Total Assets	Total Deposits	Total Lending	Total NPA
2061/62	21894	19335	8421	226
2062/63	25776	23061	9206	196
2063/64	28597	24647	10790	197
2064/65	33336	29744	13964	129
2065/66	40587	35872	13881	90

Source: Annual Reports of FY 2061/62-2065/66

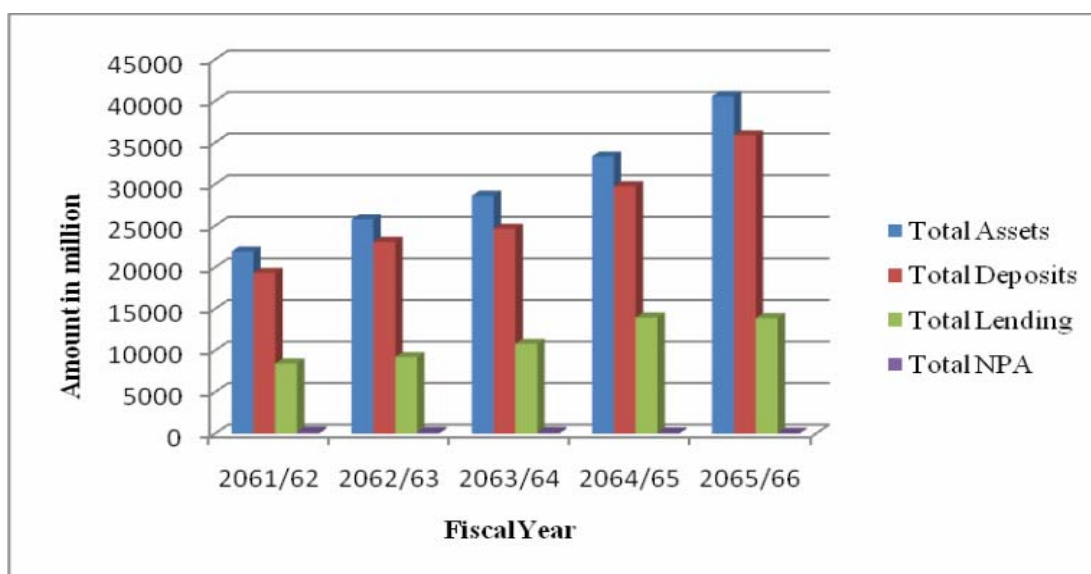
As seen from above table that in the FY 2061/62, the total asset is Rs. 21,894 million, which has increased in the FY 2062/63 to Rs. 25,776 million, and after that it is gradually increased and reached to Rs. 40,587 million in FY 2065/66. This shows that the total asset of the bank is increased in a significant manner.

The total deposit in the first year of the study is Rs. 19,335 million which is slightly increased in the following year to Rs 35,872 million. Which has shows the increasing trend and a positive attitude of the customers towards the bank.

Similarly, the total lending of the bank is Rs. 8,421 million in the FY 2061/62 which has gradually increased the following years. The total lending of the bank is Rs. 13,964 million in the FY 2064/65. It has slightly decreased in the FY 2065\66.

The total Non-Performing Assets has decreased each year, except in FY 2063/64 which has increased as compared to its previous year, which is Rs. 197 million. Total NPA of the bank was Rs. 226 million in the FY 2061/62 and it is Rs. 90 million in FY 2065/66. This shows the decreasing trend of NPA per year.

Figure 4.5
Graphical Representation of TA, TD, TL and TNPA (SCBNL)



The above figure shows that the Total Assets, Total Deposits and Total Lending of the bank are in increasing trends during the five FY of study period. Except in the FY 2065/66 the Total Landing is slightly decreased as compared to its previous year.

On the other hand Total NPA of the bank is in decreasing trend except in the FY 2063/64. All over which shows the bank has maintained its effectiveness in maintaining its NPA level.

Table 4.6
Net Profit and Total NPA (SCBNL)

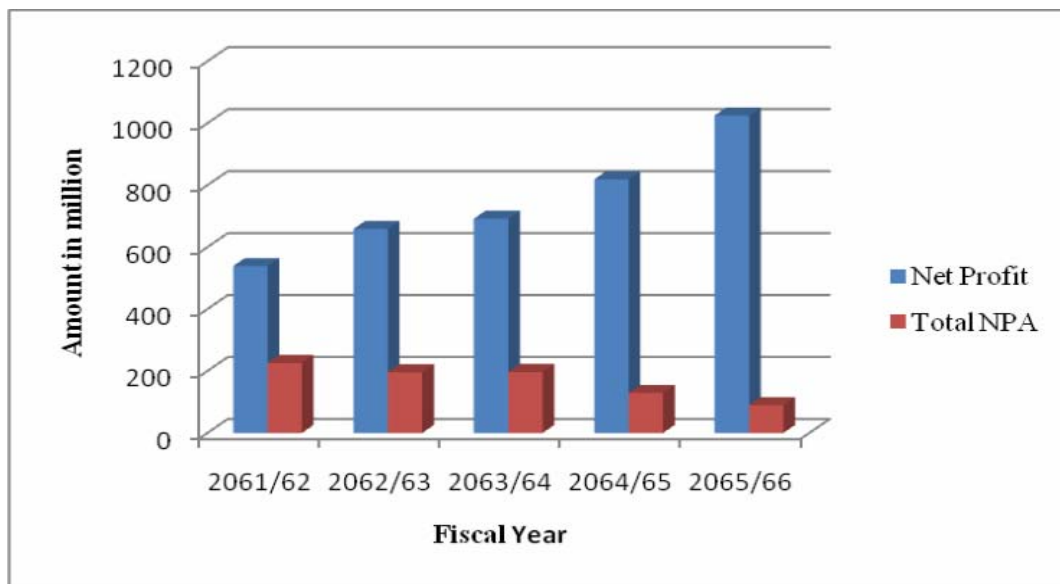
Fiscal Year	(in million)	
	Net Profit	Total NPA
2061/62	539	226
2062/63	659	196
2063/64	692	197
2064/65	819	129
2065/66	1025	90

Source: Annual Reports of FY 2061/62-2065/66

The above table shows the relationship between the net profit and the total Non- Performing Assets. In the FY 2061/62 the net profit is Rs. 539 million and it increased to Rs. 659 million in the following year. By further increment in the net profit, in the third year of the study, it became Rs. 692 million in the FY 2063/64. It is increased to Rs. 1,025 million in the FY 2065/66.

Similarly, the total NPA is has followed decreasing trend. It was Rs. 226 million in FY 2061/62, but in FY 2063/64 it is Rs. 197 million which has slightly increased as compared to its previous year, but after that it has again decreased and became Rs. 90 million in the FY 2065/66.

Figure 4.6
Graphical Representation of Net Profit and TNPA (SCBNL)



The above diagram shows that the total profit is in good level and it is in increasing trend, but whereas the NPA is decreasing trend, except in FY 2063/64 which has slightly increased as compared to its previous year. This shows that the workout of the bank in managing the NPA is satisfactory. The NPA has be-

come very low in the FY 2065/66.

c) Himalayan Bank Limited

Table 4.7
Relation between NPA, Net Profit, Total Lending and Total Deposits (HBL)

Ratios/Year	2061/62	2062/63	2063/64	2064/65	2065/66
NPA to Total Lending Ratio	7.44	6.60	3.61	2.36	2.16
Total Lending to T Deposits Ratio	50.07	55.27	56.57	61.23	71.49
Net Profit to Total Assets Ratio	1.11	1.55	1.47	1.76	1.91

Source: Annual Reports of FY 2061/62-2065/66

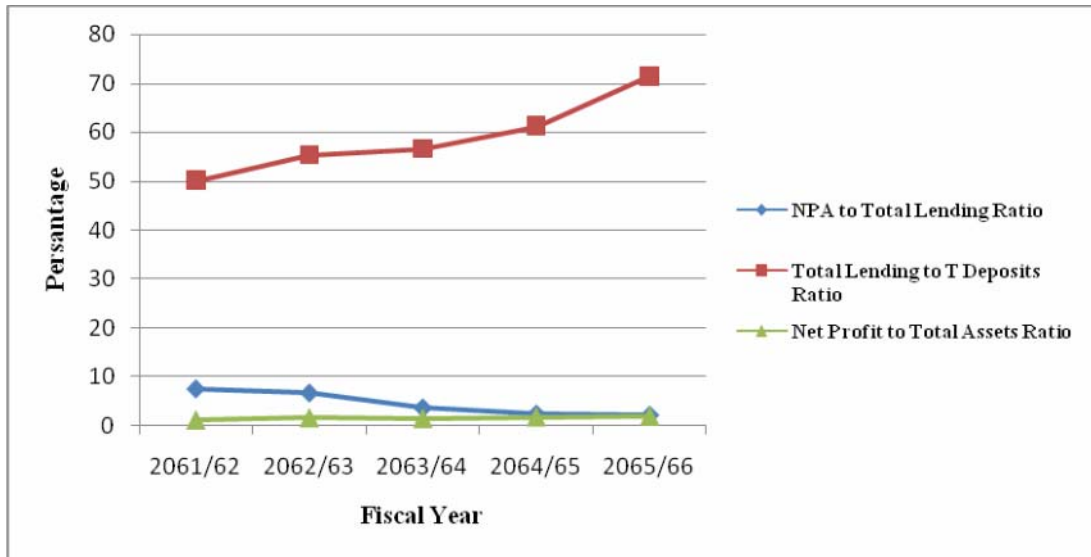
Form the above table it is clear that the Non-Performing Assets to total lending ratio of the bank had followed the decreasing trend. The NPA to Total Landing Ratio of the bank in FY 2061/62 is 7.44%, in the FY 2065/66, it has decreased to 2.16%.

The total lending to total deposits ratio in the FY 2061/62 is 50.07% and it is in increasing trend. At the beginning of FY 2061/62 it had 50.07% and at the end of FY it had increased to 71.49 %.

Similarly, the net profit to the total assets ratio is also increasing all of the years under the study, except the FY 2063/64. The ratio is 1.11% in FY 2061/62 which is increased to 1.91% at the end the FY 2065/66. This shows that the functioning of the organization is going well in this aspect.

Figure 4.7

Trend Analysis of Level of NPA, ROA & Loan-Deposit Ratio (HBL)



From the above diagram, it is clearly seen that the NPA to total lending ratio is following the decreasing trend, which indicates the effectiveness in the management of the NPA of the bank. It had decreased from around 7.44% in the FY 2061/62 to around 2.16% in the FY 2065/66.

The total lending to total Deposits ratio had also followed the increasing trend. In the fiscal year 2061/62 it has 55.27% than, gradually increased as compared to its previous and it reached to 71.49% in the FY 2065/66.

The net profit to the total assets ratio had also increased. It is at around 1.11% in the FY 2061/62, and had increased to 1.96% in the FY 2065/66. This shows the improvement in the profit of the bank.

Table 4.8

Total Assets, Total Deposits, Total Lending and Total NPA (HBL)

(in million)

Fiscal Year	Total Assets	Total Deposits	Total Lending	Total NPA
2061/62	27845	24814	13451	1001
2062/63	29460	26491	15762	1041
2063/64	33519	30048	17794	642
2064/65	36176	31843	20180	477
2065/66	39320	34681	25520	551

Source: Annual Reports of FY 2061/62-2065/66

From the above table, we can see that the total assets of the bank had gradually increased over the years. In the FY 2061/62, it is Rs. 27845 million, which has followed the increasing trend and had reached to Rs. 39,320 million in the FY 2065/66.

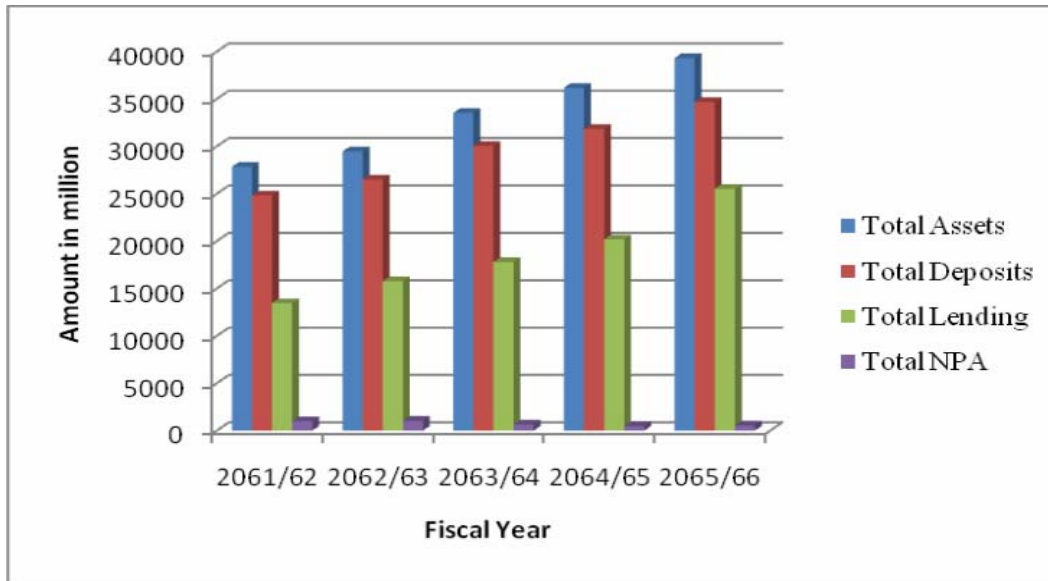
The total deposit of the bank had also followed the increasing trend as that of total assets. In the FY 2061/62, it is Rs. 24,814 million which increased till the FY 2065/66 and became Rs. 34,681 million, showing a good trend of increment in overall.

The total lending of the bank is also found to be following the same track. In the FY2061/62 it is Rs. 13451 million and it had followed the increasing trend and had reached to Rs. 25,520 million in the FY 2065/66.

The total Non-Performing Assets had decreased in each year, except in FY 2062/63 and FY 2065/66 as compare to its previous year which was Rs. 1,041 million and Rs. 551 million respectively. Total NPA of the bank was Rs.1001 million in FY 2061/62 and it is Rs. 551 million in FY 2065/66 which indicate the decreasing trend during the study period.

Figure 4.8

Graphical Representation of TA, TD, TL and TNPA (HBL)



The above diagram shows that the relationship between the Total Assets, Total Deposits, Totals Lending and the total NPA of the bank. We can find from the above diagram that Total Asset, Total Deposit and Total Lending had followed increasing trend, where as

Total NPA had followed decreasing trend except in the FY 2062/63 and FY 2065/66 which has slightly increased as compared to its previous year.

Table 4.9

Net Profit and Total NPA (HBL)

(in million)

Fiscal Year	Net Profit	Total NPA
2061/62	308	1001
2062/63	457	1041
2063/64	492	642
2064/65	636	477
2065/66	753	551

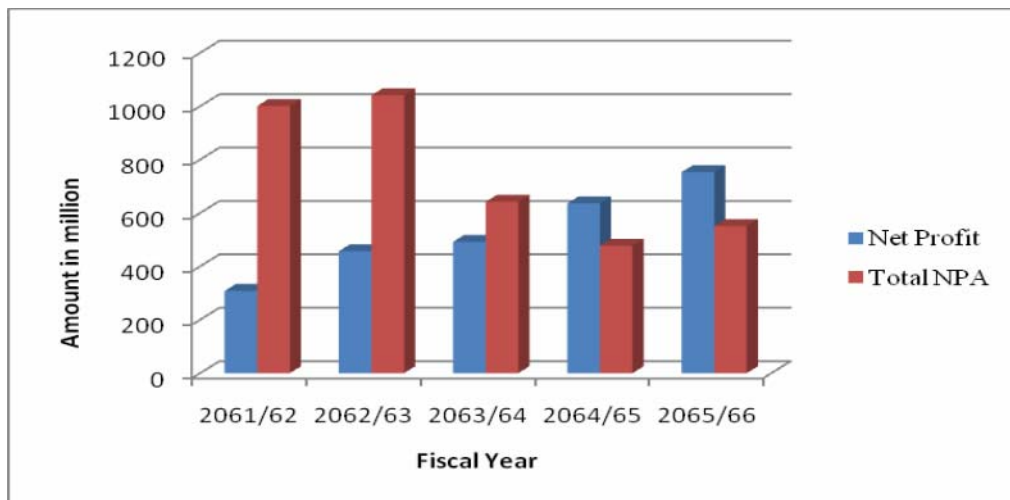
Source: Annual Reports of FY 2060/61-2065/66.

Form the above table; we can see that the net profit of the bank had followed a increasing trend. In the FY 2061/62it is Rs. 308 million, which had increased in the following year and had reached to Rs. 753 million in the FY 2065/66, which shows that the bank is maintaining its standard over the years.

The total NPA of the bank in the FY 2061/62 is Rs. 1,001 million, which had gone down the year following to that. In the FY 2065/66 it had reached to Rs. 551 million.

Table 4.9

Graphical Representation of Net Profit and TNPA (HBL)



The above table shows that the total NPA is above the Net Profit through out the study period except in the FY 2064/65. It is also seen that the NPA had followed the decreasing trend except in the year 2062/63, which had slightly increased as compared to its previous year and the net profit goes on increasing over the same period and at the FY 2065/66 it had reached over 753 million.

d) Nepal Investment Bank

Table 4.10

Relation between NPA, Net profit, Total Lending and Total Deposits (NIB)

Ratios/Year	2061/62	2062/63	2063/64	2064/65	2065/66
NPA to Total Lending Ratio	2.69	2.07	2.37	1.12	0.58
Total Lending to T Deposits Ratio	73.34	69.63	72.56	79.91	78.86
Net Profit to Total Assets Ratio	1.42	1.69	1.79	1.77	1.68

Source: Annual Reports FY 2060/61-2065/66

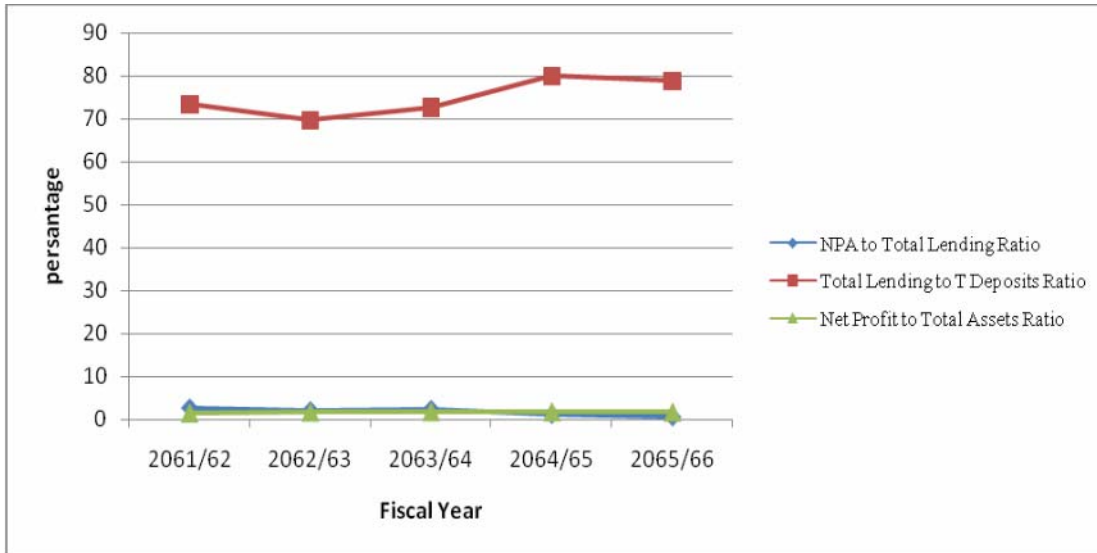
From the above table we can see that the level of NPA i.e. the NPA to the total lending ratio is decreased over the five years time, except in the FY 2063/64 which is slightly increased to 2.37% as compared to its previous year. In the FY 2061/62 it was 2.69%, it has decreased to 1.12% till the year of 2064/65 than, it decreased to 0.58% in FY 2065/66. This shows the efficiency of the bank to manage the NPA, as the lower level of NPA is desirable to the individual banks.

The total lending to the total deposits ratio had increased over the five years time. In the FY 2061/62 it was 73.34%, which is decreased to 69.63 % in the following year. It was 79.91% in the FY 2064/65. But in the year 2062/63 it is slightly decreased to 69.63% as compared to its previous year. But the overall trend of the ratio had followed the increasing trend. This shows the efficiency of the bank in the expansion of total lending, which is always desirable by the bank and the Nepal Invest Bank is able to maintain it.

Similarly, the Net Profit to the total assets ratio is increased at the end of the study period of five years. In the FY 2061/62 the ratio is 1.42%, the ratio is 1.79% for the FY 2063/64 than, it is slightly decreasing Trend. This shows that the bank is able to maintain its profit over the years, which is desirable for the banks.

Figure 4.10

Trend Analysis of Level of NPA, ROA & Loan-Deposit Ratio (NIB)



The above figure clearly shows the NPA to the total lending ratio had over period and had remain to its minimal position. The total lending to total deposits ratio is observed to be increased over the years except in FY 2062/63 and FY2063/64, which is lower than the previous year 2061/62 and2063/64. Similarly, the net profit to the total assets ratio had also increased over the years, it is 1.79% in the year 2064/65, which shows a goodmanagement of the bank.

Table 4.11

Total Assets, Total Deposits, Total Lending and Total NPA (NIB)

(in million)

Fiscal Year	Total Assets	Total Deposits	Total Lending	Total NPA
2061/62	16274	1425	1045	28
2062/63	21330	1892	1317	27
2063/64	27591	2448	1777	42
2064/65	38873	3445	2752	31
2065/66	53010	4669	3682	21

Source: Annual Reports of FY 2061/62-2065/66

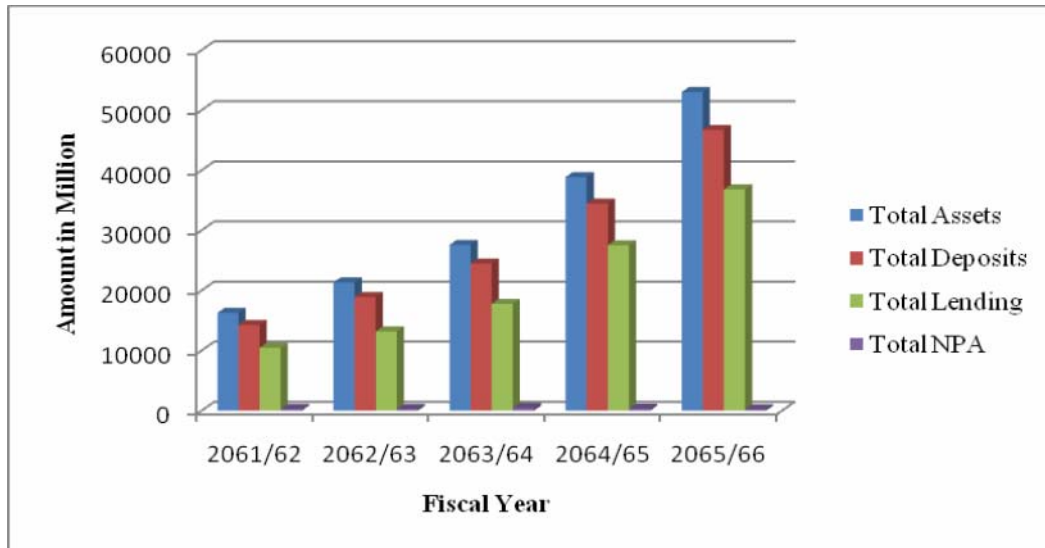
Form the above table it is seen that the total asset of the bank in FY 2061/62 is Rs.16,274 million which had increased in the following years tilt the FY 2065/66. In the FY2063/64 it is Rs. 27,105 million and in the FY 2065/66 the amount had increased to Rs.53,010 million, showing an increasing trend all of the years under the study. On the other hand the total deposit of the bank in the FY 2061/62 is Rs. 14,255 million, which is again increased in the following FY. It had also is followed the increasing trend as that of total assets. In the FY 2063/64 it is Rs. 24,489 million and had reached to Rs.46,698 million in the FY2065/66.

The total lending of the bank in the FY 2061/62 is Rs. 10,454 million, which had followed the increasing trend to all the years under the study. In the FY 2062/63 it is Rs. 13,178 million and in the FY 2065/66, the same for the Nepal Investment Bank is Rs. 36,827 million showing the increasing trend of the total lending, the efficiency of the management is also reflected from the lending of the commercial bank.

As for the total NPA of the bank, it had followed decreasing trend. The total NPA of the bank in FY 2061/62 is Rs. 281 million and had increased to Rs. 422 million in FY 2063/64. But in the year 2064/65 it had 310 million and decreased to Rs. 214 million as comparedto its previous year.

Figure 4.11

\Graphical Representation of TA, TD, TL and TNPA (NIB)



The above diagram clearly shows that all the variables shown in the diagram had gone well except Total NPA. Total assets, total lending, total deposits are increased each year in a significant manner and the total NPA is also increased, except for the year 2065/66 it is had decreased in comparison to its previous year.

Table 4.12

Net Profit and Total NPA (NIB)

(in million)

Fiscal Year	Net Profit	Total NPA
2061/62	232	281
2062/63	351	272
2063/64	501	422
2064/65	697	310
2065/66	900	214

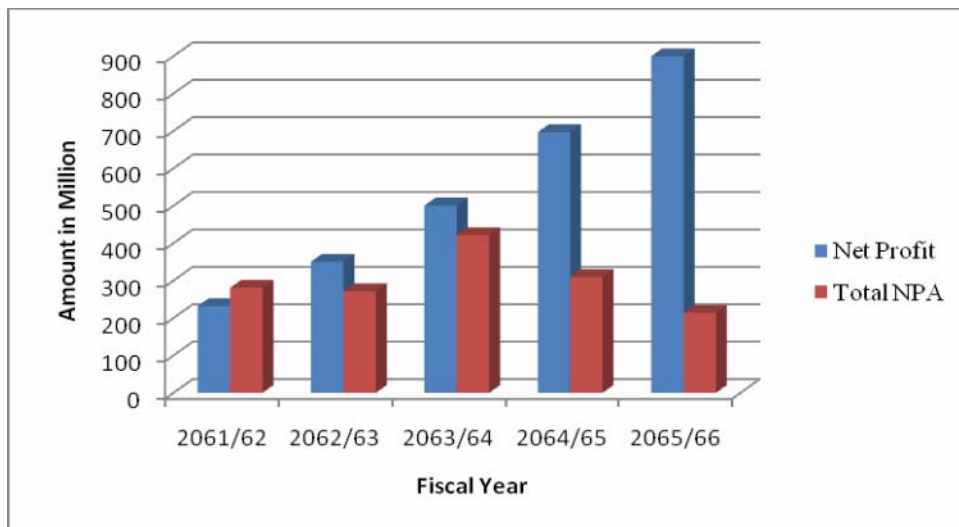
Source: Annual Reports of FY 2061/62-2065/66

The above table shows that the net profit of the bank in the FY 2061/62 is Rs. 232 million, which had followed an increasing trend till FY 2065/66. It is Rs. 351

million in the FY 2062/63 and had reached to Rs. 900 million in the FY 2065/66, showing an efficiency of the bank in generating the profit.

Similarly the total NPA of the bank for the FY 2061/62 is Rs. 281 million, which is increased to Rs. 422 million in the FY 2063/64. It is then in the FY 2065/66 which decreased and reached to Rs. 214 million, which shows a fluctuation in the NPA trend.

Figure 4.12
Graphical Representation of Net Profit and TNPA (NIB)



The above figure shows that that the Net profit of the bank had followed the increasing trend where as NPA of the bank had shown the fluctuation nature. In the FY 2061/66 the NPA of the bank is greater than the net profit and in the other years the total NPA has remained below the net profit. This shows the management is able to minimize the NPA of the bank later years.

e) **Bank of Kathmandu**

Table 4.13
Relation between NPA, Net Profit, Total Lending and Total Deposits (BOK)

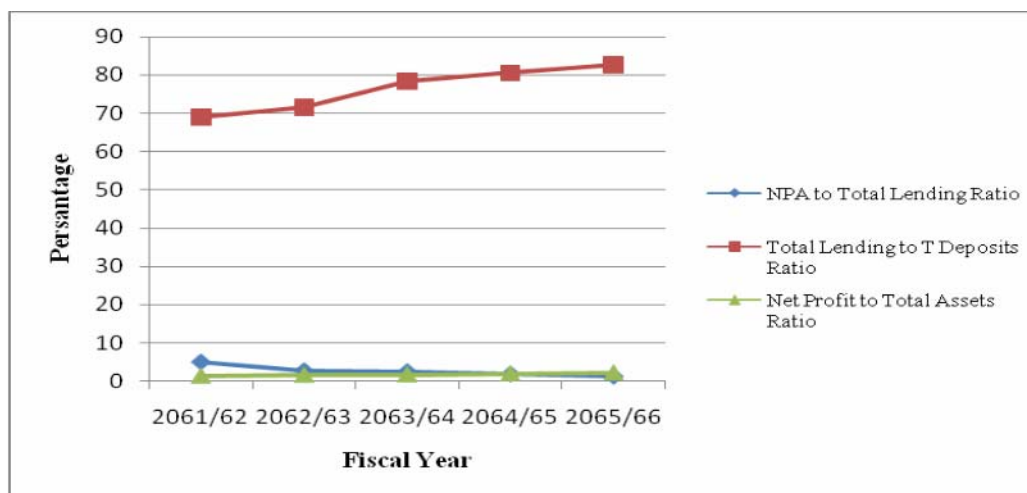
Ratios/Year	2061/62	2062/63	2063/64	2064/65	2065/66
NPA to Total Lending Ratio	4.99	2.72	2.51	1.86	1.27
Total Lending to T Deposits Ratio	68.87	71.42	78.25	80.51	82.65
Net Profit to Total Assets Ratio	1.42	1.65	1.80	2.04	2.25

Source: Annual Reports of FY 2061/62-2065/66.

The above table shows that the NPA to the total lending ratio of the bank in the FY 2061/62 is 4.99% which had decreased each year and had reached to 2.72% in the following year and had reached to 1.27% in the FY 2065/66. The total lending to total deposits ratio had increased the different years covered by the study. In the FY 2061/62 it is 68.87% and which had increased in the following years and had reached to 82.65% in the FY 2065/66.

The net profit to the total assets ratio had increased over the years under the study. The ratio is 1.42% in the FY 2061/62 which had increased to 2.25% in the year 2065/66. This shows increasing trend in the ratio net profit to total assets.

Figure 4.13
Trend Analysis of Level of NPA, ROA & Loan-Deposit Ratio (BOK)



The total lending to total Deposits ratio had also followed the increasing trend. In the fiscal year 2061/62 it has 68.87% than, gradually increased as compared to its previous and it reached to 82.65% in the FY 2065/66. On the other hand the NPA to total lending ratio is decreasing during the period of study and the net profit of the bank had followed the increasing trend over the study period, showing the good sign for the bank.

Table 4.14

Total Assets, Total Deposits, Total Lending and Total NPA (BOK)

(in million)

Fiscal Year	Total Assets	Total Deposits	Total Lending	Total NPA
2061/62	9857	8943	6182	309
2062/63	12278	10485	7489	204
2063/64	14570	12389	9694	243
2064/65	17722	15833	12748	237
2065/66	20496	18084	14946	199

Source: Annual Reports of FY 2061/62-2065/66

The above table shows that the total assets of the bank had followed the increasing trend overall during the study period. In the FY 2061/62, the total assets is Rs. 9,857 million and which is increased to Rs. 12,278 million in the FY 2062/63 and had reached to Rs.

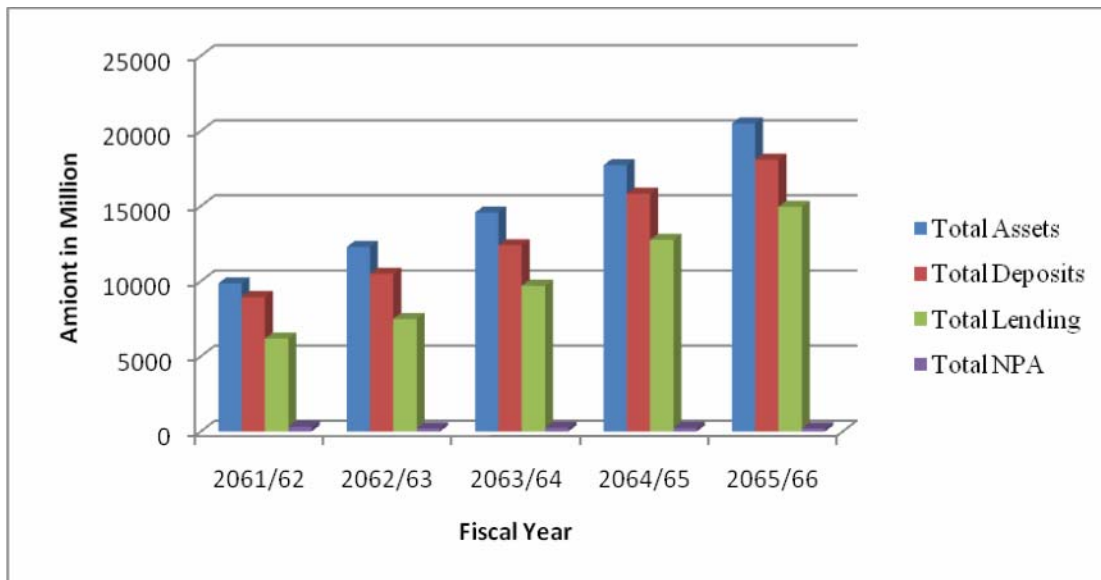
20,496 in the FY 2065/66. This shows an increment and the efficiency of the organization in maximizing the wealth of the owner of the bank.

The total deposits of the bank had also followed the same track as the total assets. The total deposits had also increased over these years. In the FY 2061/62 it is Rs. 8,943 million and is increased to Rs. 10,485 million in the following year. It had reached to Rs. 18,084 million in the FY 2065/66. This shows an increasing trend over the study period. In the FY 2061/62 the total lending of the

bank is Rs. 6,182 million and it is increased to Rs. 7,489 million in the FY 2062/63 and it is increased all the way during five years time and had reached to Rs. 14,946 million in the FY 2065/66.

Similarly, the case of the total Non-Performing Assets has a little bit different from that of the above variables. The NPA of the bank for the FY 2061/62 is Rs. 309 million, whereas the NPA of the bank in FY 2062/63 is decreased to Rs. 204 million, which is then increased to Rs. 243 million in the following year to that, and had remained at Rs.199 million in FY 2065/66.

Figure 4.14
Graphical Representation of TA, TD, TL and TNPA (BOK)



The above diagram shows that all the variables had increased except that of the total NPA, which had followed decreasing trend. The Total NPA is drastically decreased in FY 2065/66 as compared to the FY 2061/62. From this it can be traced out that the level of NPA is very low in comparison to the total lending.

Table 4.15
Net Profit and Total NPA (BOK) (in million)

Fiscal Year	Net Profit	Total NPA
2061/62	140	309
2062/63	202	204
2063/64	262	243
2064/65	361	237
2065/66	426	199

Source: Annual Reports of FY 2061/621-2065/66.

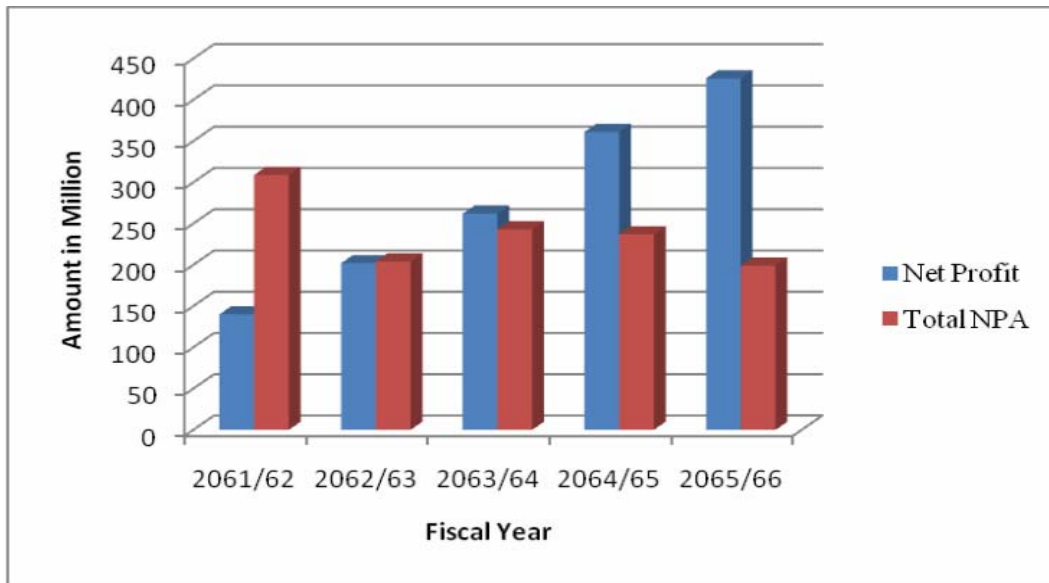
The above table shows the relationship between the total Non-Performing Assets and the net profit of the bank over the five years of time starting from the FY 2061/62 to 2065/66.

The net profit of the bank for FY 2061/62 is Rs. 140 million, which is increased to Rs.202 million in the following year, and it had reached to Rs. 426 million in FY 2065/66.

Similarly, in the case of the total Non-Performing Assets is a little bit different. The NPA of the bank for FY 2061/62 is Rs. 309 and the NPA of the bank in FY 2062/63 is Rs. 204 million, which is slightly increased to Rs. 243 million in the following year. In the FY 2064/65 the NPA of bank is Rs.237 million and it decreased to Rs.199 million in FY2065/66.

Figure 4.15

Graphical Representation of Net Profit and TNPA (BOK)



From the above figure we can see that the Total NPA of the bank is fluctuating all over the study period, where as the Net profit had followed the increasing trend. In the FY 2061/62 it is more than the net profit and after that the bank had managed to keep it under its Net profit but even though the health of Total NPA is found bad.

a) Nepal Bangladesh Bank Limited

Table 4.16

Relation between NPA, Net Profit, Total Lending and Total Deposits (NBBL)

Ratios/Year	2061/62	2062/63	2063/64	2064/65	2065/66
NPA to Total Lending Ratio	19.04	27.12	39.66	31.73	19.80
Total Lending to Total Deposits Ratio	69.39	65.26	87.01	87.61	91.33
Net Profit to Total Assets Ratio	0.00	0.00	0.00	6.35	18.04

Source: Annual Reports of FY 2061/62-2065/66

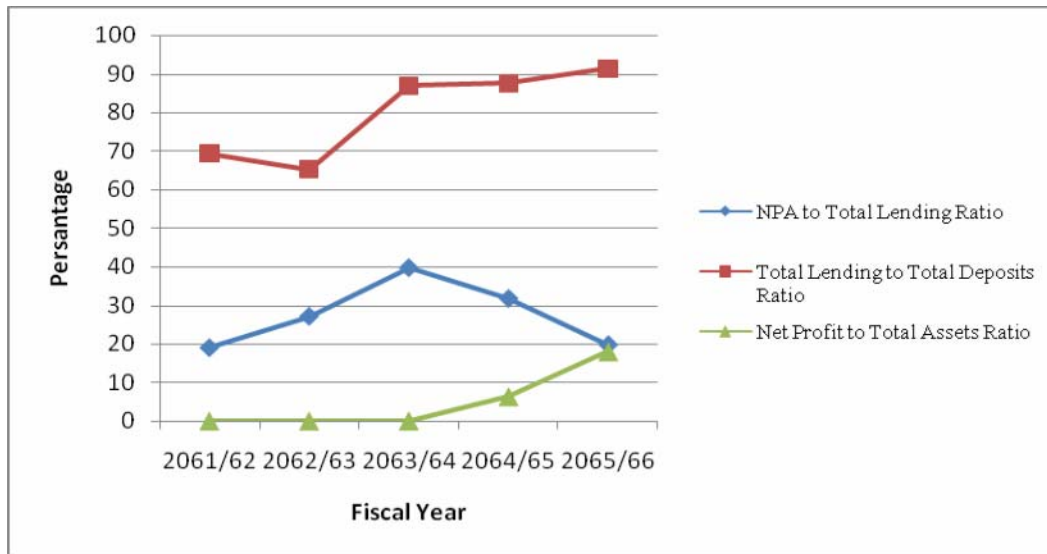
The above table shows that the total Non-Performing Assets to total lending ratio is 19.04 in FY 2061/62 and it had increased during the following years. In the FY 2062/63 it became 27.12% and increased till the FY 2063/64 to 39.76% and it has slightly decreased to 31.73% and 19.80% in the FY 2064/65 and FY 2065/66 respectively. This shows the bad health of financial condition of Nepal Bangladesh bank.

But as in the case of total lending to the total deposits ratio it had fluctuated throughout the five FY from 2061/62 to 2065/66. In the FY 2061/62 it is 69.39 %, which is decreased to 65.26 % in the FY 2062/63, and after that it is increased to 87.01%% in FY 2063/64. Then, it is regularly increased and reached to 91.33% in FY 2065/66.

The net profit to the total assets ratio had also fluctuated through the five year since FY 2061/62 to FY 2065/66. In the FY 2061/62 it is 0.00% which even became 0.00% in the FY 2062/63 and FY 2063/64, this shows an ineffectiveness of the organization to maintain its profit level, but however after that the bank managed to increase its performance in the following year as shown by the ratio which reached to 6.35% in the FY 2064/65, in FY 2065/66 it has again increased to 18.04% and it shows good recovery in maintaining net profit.

Figure 4.16

Trend Analysis of Level of NPA, ROA & Loan-Deposit Ratio (NBBL)



Form the above figure it is clearly seen that the NPA to total lending ratio is increased over the FY 2063/64 and reached to 39.66% than, it decreased to till FY 2065/66. But Total Lending to Total deposit ratio and Net Profit to Total Assets ratio had found to be fluctuated. For Total lending to Total to Total deposit ratio it had remained less in the FY 2062/63, but for Net profit to Total Asset ratio it is reached zero in the FY 2061/62 to FY 2063/64, which indicated the banks inefficiency in maintain its profit level. Than, it raised up to 18.04%, which shows better recovery to maintain net profit.

Table 4.17

Total Assets, Total Deposits, Total Lending and Total NPA (NBBL)

(in million)

Fiscal Year	Total Assets	Total Deposits	Total Lending	Total NPA
2061/62	13277	12126	9627	1833
2062/63	11609	13015	9696	2927
2063/64	7254	9385	9169	3646
2064/65	9391	10883	9470	2945
2065/66	11964	9997	9130	2365

Source: Annual Reports of FY 2061/62-2065/66

The above table shows the relationship of the total assets, total deposits, total lending, and total NPA. The total asset of the bank is decreased over the years. It is Rs. 13,277 million in the FY 2061/62 which is gradually decreased to Rs. 11,609 million in the following year. But in the FY 2063/64 it is slightly decreased to Rs. 7,254 million as compared to FY 2036/64 showing some sign of improvement in the year 2064/65 and it reached to Rs. 9,391million, but however the year following that it has again started to increase, which finally reached to Rs. 11,964 million FY 2065/66.

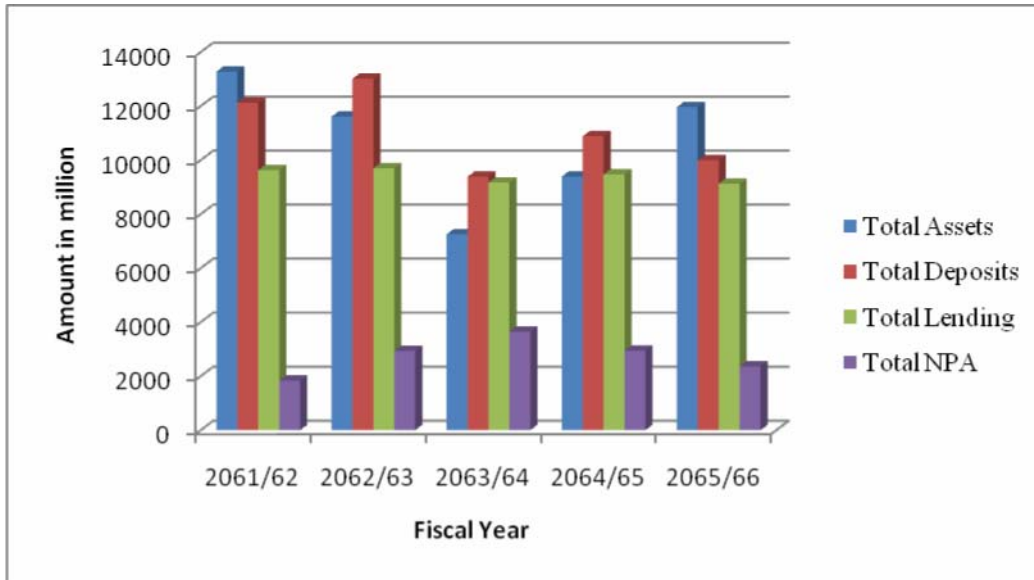
The total deposits of the bank are fluctuated over the FY during the study period. It is Rs.12,126 million in the FY 2061/62 which is increased to Rs. 13,015 million in the following year. But in FY 2063/64 it is slightly decreased to Rs. 9,385 million, than, it is again increased in the FY 2064/65 to Rs. 10,883 million and finally it reached to Rs.9,997 million in the FY 2065/66.

The total lending of the bank had also shown the fluctuating trends as its Total Deposits. It is Rs9,627 million in the FY 2061/62 which has slightly increased to Rs. 9,696 million in the following year, thereafter decreased to Rs. 9,169 million in the FY 2063/64. In the FY 2064/65 it has again increased to Rs. 9,470 million and decreased to Rs. 9,130 million in the FY 2065/66. It is seen by this observation that the bank is showing its effectiveness in controlling its Total Lending.

Similarly, the Non-Performing Assets are increased over the years under the study. In the FY 2061/62 it is Rs. 1,833 million, which is increased to Rs. 2,927 million in FY 2062/63 and reached up to Rs. 3,646 million thousands in the FY 2063/64. Except in the FY 2064/65 and FY 2065/66 which has slightly decrease to Rs. 2,945 million to 2,365million as compared to its previous year, the overall Total NPA of the bank had followed the increasing tends.

Figure 4.17

Graphical Representation of TA, TD, TL and TNPA (NBBL)



The above diagram clearly shows that the total assets, total deposits and the total lending have been fluctuating over the different years under the study, whereas the Non- Performing Assets of the bank are increasing during the same period except in the FY 2065/66 which is decreased in comparison to its previous year.

Table 4.18

Net Profit and Total NPA (NBBL)
(in million)

Fiscal Year	Net Profit	Total NPA
2061/62	-----	1833
2062/63	(1696)	2927
2063/64	(1061)	3646
2064/65	596	2945
2065/66	21158	2365

Source: Annual Reports of FY 2060/61-2065/66

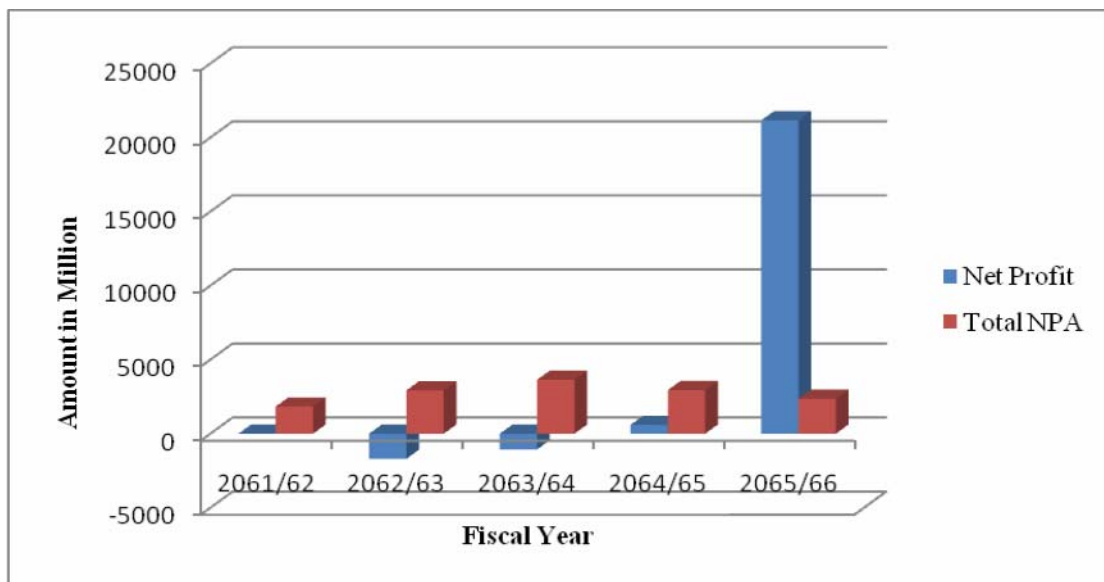
The above table shows that the net profit of the bank had followed the fluctuating trend over all the five FY. In the FY 2060/61 it is Rs. 2 million, which fall to zero in the FY

2061/62. This shows the ineffectiveness of the bank on maintain its profit. But however it had increased to Rs. 292 million in FY 2062/63, showing the sign of improvement in the banks working efficiency. And the years after that the Net Profit had followed increasing trends. The Total NPA reached to Rs. 800 million in FY 2064/65.

Similarly, the NPA also fluctuated over the years under the study. In the FY 2060/61 it is Rs. 1,042 million, which increased to Rs. 3,646 million in FY 2063/64 and had again decreased in the next year to Rs. 2,945 million.

Figure 4.18

Graphical Representation of Net Profit and TNPA (NBBL)



The above figure clearly shows that the net profit of the bank had negative over the FY 2063/64, than after it raised up to Rs. 21, 1588 million in the FY 2065/66 and the amount of Non-Performing Assets had followed the fluctu-

ating trends. But however the bank has managed to keep it lower than its Net profit.

4.2 Correlation Analysis

Correlation Analysis is the statistical tool that can be used to describe the degree to which one variable is linearly related to other variable. Two or more variables are said to be correlated if change in the value of one variable appears to be related or linked with the change in the value of the other variable. Correlation is an analysis of the covariance between two or more variables and correlation analysis deals to determine the degree of relationship between two or more variables. It refers to the closeness of the relationship between the different variables. In the correlation analysis, only one variable is treated as the dependent variable and one or more variables are treated as independent.

Correlation Analysis generally used to describe the degree to which one variable is related to another, in statistics is used in order to depict the co-variance between two or more variables. It helps to determine whether

- A positive or negative relation exists.
- The relation is significant or insignificant.
- Establishes cause and effect relation if any.

The statistical tool, correlation analysis is preferred in this study to identify the relationship between NPA and ROA and whether the relationship is significant or not. Here NPA denotes the percentage of NPA in total lending of the bank and ROA denotes the net profit as percentage of total assets of the bank.

Table 4.19

Correlation between NPA and ROA of Sample Bank

Banks	Coefficient of correlation (r)	Relation	Coeff. Of Determination (r²)	Prob. Error (PE)	Significant/ Insignificant
NABIL	0.97	Positive	0.94	0.0180	Significant
SCBNL	-0.38	Negative	0.14	0.2560	Insignificant
HBL	-0.83	Negative	0.69	0.0930	Significant
NIBL	-0.48	Negative	0.23	0.2320	Insignificant
BOK	-0.93	Negative	0.86	0.0422	Significant
NBBL	-0.41	Negative	0.17	0.2500	Insignificant

Source: Annex 1

The above table shows the correlation coefficient between the Non Performing Assets to the Return on Assets. The table shows that except NABIL there is negative relationship between these two variables in other banks. The established theory also states that the profit and the Non-Performing Assets also flow in the opposite directions. When the amount of NPA is lesser, profit is high and whenever the amount of NPA is more then profit goes on decreasing, which is truly explained by the above table.

HBL & BOK have the correlation coefficient of -0.83 & -0.93 which are categorized as having high degree of negative correlation. And 69% & 86% of the profitability is affected by the NPA to the respective banks and the rest are affected by the other factors.

And the test so made for these two banks is significant as the correlation is greater than

Probable Error [P.E.] multiplied by six times.

SCBNL, NBBL and NIBL have the correlation coefficient of -0.38, -41 and -0.48, respectively which are categorized as having low degree of negative correlation. Only 14%, 17% and 23% of the relationship is affected by the NPA and the remaining 86%, 83% and 77% for the individual bank is affected by the other factors. Furthermore, the value of P.E. is 0.2560, 0.2500 and 0.2320 for each

each of the bank indicating an insignificant relationship between them.

Similarly, NABIL have high degree of positive correlation of 0.97. The table also indicate that 94% of the relationship is affected by its NPA where as remaining 6% of the change is caused by other factors. The observation is significant as the value of P.E is only 0.0180.

From the above calculations, we can conclude that the profitability of the individual bank is fully dependent in the Non-Performing Assets of the respective banks. Higher the NPA lower will be the Net Profit and vice-versa.

Table 4.20
Correlation between Total Lending and NPA of Sample Banks

Banks	Coefficient of correlation (r)	Relation ship	Coeff. Of Determination (r2)	Prob. Error (PE)	Significant/ Insignificant
NABIL	0.74	Positive	0.55	0.1357	Insignificant
SCBNL	-0.94	Negative	0.89	0.0344	significant
HBL	-0.79	Negative	0.63	0.1111	significant
NIBL	-0.38	Negative	0.14	0.2582	Insignificant
BOK	-0.60	Negative	0.36	0.1390	Insignificant
NBBL	-0.44	Negative	0.19	0.2428	Insignificant

Source: Annex 2

The table above presented shows the relationship between the total lending and the total NPA of the different commercial banks under study. It shows how much is NPA related with the lending of the bank. The table shows the correlation of the SCBL, HBL and BOK to be -0.94, -0.79 and -0.60 respectively, a high degree negative correlation. This shows that whenever the total lending of the bank goes in increasing the NPA of the bank decreasing accordingly. But this particular factor affects the NPA of SCBL, HBL and BOK only by 89%, 63% and 36 % and remaining 11%, 37% and 64% respectively is

caused by the other factors. And SCBL and HBL is insignificant as the probable error of the bank is less than correlation whereas BOK is significant as the probable error of the bank is higher than correlation.

The above table also shows that the correlation of the NIBL and NBBL to be – 0.38 and -0.44, a low degree negative correlation. This shows that whenever the total lending of the bank goes in increasing the NPA of the bank also increases. And this particular factor affects the NPA by 14% and 19% respectively and remaining 86% and 81% is caused by the other factors. It indicates insignificant result as the probable error of the bank is less than correlation.

Similarly, correlation of the NABIL has positive relation, having 0.74. This shows the positive relation between the total lending and the Non Performing Assets; i.e., whenever the total lending of the bank goes on increasing the total NPA of the bank is goes on increasing. But only 55% for the bank is caused by this particular factor and the remaining 45% is caused by the other factors. And the relation for the all the banks is insignificant, as the P.E. for each of the bank is less than the correlation.

Table 4.21

Correlation Coefficient between NPA of Sample Bank and the Population

Banks	Coefficient of correlation (r)	Relation ship	Coeff. Of Determination (r²)	Prob. Error (PE)	Significant/ Insignificant
NABIL	-0.74	Negative	0.55	0.3157	Insignificant
SCBNL	0.99	Positive	0.98	0.0060	Significant
HBL	0.80	Positive	0.64	0.1085	Significant
NIBL	0.42	Positive	0.18	0.2480	Insignificant
BOK	0.63	Positive	0.40	0.2697	Insignificant
NBBL	-0.0087	Negative	0.000076	0.3016	Insignificant

Source: Annex 3

The table above shows the relationship between the Non-Performing Assets of the sample Banks with that of the total population i.e. all the twenty five commercial banks of the industry. The theory suggests that whenever the NPA of the individual bank goes on increasing there will be corresponding movement in the NPA of the population too.

The correlation coefficient of the NIBL and BOK is 0.42 and 0.63 respectively meaning hereby, whenever the NPA of the population is increased, the NPA of the banks is also increased and vice-versa. But this change is caused only 18% and 40% respectively by the overstated factor and remaining 82% and 60% are caused by other factors.

The correlation coefficient of the SCBNL and HBL is 0.99 and 0.80 respectively, indication the banks having high degree of positive relation. This states that whenever the NPA of the population is increased, the NPA of the bank is also increased. And this Change is caused by 98% and 64% respectively by the overstated factor and remaining is caused by other factors.

Similarly, the correlation of NABL and NBBL are -0.47 and -0.0087 , which are categorized as the having negative correlation. It explains that whenever the amount in the NPA of the population is decreased over the years, the amount of NPA of the individual sample banks has increased and vice-versa. But, this change is effected by 55% and 1% respectively, and the remaining 45% and 99% are the cause of other factors for these banks.

4.3 Test of Hypothesis

The main objective of this test is to test the significance regarding the parameters of the population on the basis of sample drawn from the population. In this study the following hypothesis is set:

a. Test of hypothesis between NPA and Total Lending of the Banks:

Is there any significant relation between total lending of commercial banks and the amount of the Non-Performing Assets?

Null Hypothesis, H_0 : $p=0$, i.e. there is not any significant relation between Total Lending of commercial banks and the amount of the Non-Performing Assets.

Alternative hypothesis, H_1 : $p \neq 0$, i.e. there is significant relation between total lending of commercial bank and the amount of the Non-Performing Assets.

T-Test for Nabil Bank Limited

1. Test of Hypothesis

Here,

\bar{X} = Mean of NPA of Bank

\bar{Y} = Mean of total Lending of Bank

Here using the notification often use in testing the hypothesis

\bar{X} = 1.78

\bar{Y} = 179.77

$$S = \sqrt{\frac{\sum(X-\bar{X})^2 + \sum(Y-\bar{Y})^2}{n_1 + n_2 - 2}}$$

$$= \sqrt{\frac{0.3586 + 19.055.15}{5 + 5 - 2}}$$

$$= \sqrt{\frac{19.055.508}{8}}$$

$$\therefore S = 48.805$$

Then,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$= \frac{168 - 112.52}{\sqrt{(48.80)^2 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$= -5.76$$

$$\therefore |t| = 5.77$$

Degree of freedom, d.f = n-1 = 5-1 = 4

Now, the tabulated values of 't' at 5% level of significance and 4 degree of freedom, for two tailed test is 2.776

Decision:

Since the calculated value of 't' i.e. |t| is more than tabulated value [6.1128 > 2.776], the relationship is significant and H1 is accepted. There is significant relationship between the amount of Non-Performing Assets of sample bank and its total lending.

The 't' value for all the banks is also higher than that given in the table; so, it is concluded that there is significant relationship between the amount of Non-Performing Assets of sample banks and its total lending (*Source: Annex 4*).

b. Test of hypothesis between NPA of the Bank and the population:

Is there any significant relationship between the amount of Non-Performing Assets of sample banks and the population?

Null hypothesis, H_0 : $p=0$, i.e. there is not any significant relationship between the amount of Non-Performing Assets of sample banks and the population.

Alternative hypothesis, H_1 : $p \neq 0$, i.e. there is significant relationship between the amount of Non-Performing Assets of sample banks and the population.

T-Test for Nabil Bank Limited

Here,

\bar{X} = Mean NPA of Sample Bank

\bar{Y} = Mean NPA of Population Banks

Here using the notation often use in testing the hypothesis

$$\bar{X} = 1.78$$

$$\bar{Y} = 219.76$$

$$S = \sqrt{\frac{\sum(X-\bar{X})^2 + \sum(Y-\bar{Y})^2}{n_1 + n_2 - 2}}$$
$$= \sqrt{\frac{0.3586 + 13.478.87}{5 + 5 - 2}}$$

$$\therefore S = 41.047$$

Then,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$
$$= \frac{1.78 - 219.76}{\sqrt{(41.047)^2 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$t = -8.396$$

$$\therefore |t| = 8.396$$

Degree of freedom, $d.f = n-1 = 5-1$
 $= 4$

Now the tabulated values of 't' at 5% level of significance and 4 degree of freedom, for two tailed test is 2.776.

Decision:

Since the calculated value of 't' i.e. $|t|$ is more than tabulated value [$13.786 > 2.776$], the relationship is significant and H_1 is accepted. There is significant relationship between the amount of Non-Performing Assets of sample bank and the population.

The t value for all the banks is also higher than that given in the table; so, it is concluded that there is significant relationship between the amount of Non-Performing Assets of sample banks and the population (*Source: Annex 4*)

4.4 Major Findings

4.4.1 Finding from Trend Analysis, and Correlation Analysis

Nabil Bank Limited

The Total Assets, Total Deposits, Total Lending and Net Profit of Nabil Bank are in increasing Trend marginality. Each of these variables has increased by double times more. On the other hand NPA trend is fluctuating increasing at first and decreasing then increased at last.

The level of NPA i.e. NPA to the total lending ratio has decreased over the period due to increase in the total lending and also decrease in the NPA. The profitability of the bank has decreased over the period. In the FY 2061/62 it was only 3.06% and is decreased to 2.55% in the FY 2065/66.

The result obtained through analysis between the level of NPA and ROA, Total Lending and NPA, NPA of the banks and population have insignificant correlation.

The relation between NPA and ROA has positive correlation. It concludes that whenever the level of NPA has increased ROA has also increased. On the other hand the correlation between Total Lending and NPA of the bank is found Positive. Thus it can be induce Total Lending have bearing on the rise of NPA. In case of NPA of the bank and the population has negative correlation. This shows that the NPA of the bank has not followed the trend that of the total NPA of population banks.

Standard Chartered Bank Nepal Limited

SCBNL has increasing Total Assets, Total Deposits, Total Lending and Net Profit trend. Simultaneously, along with them NPA trend also can be seen de-

creasing.

The NPA to Total Lending ratio has decreased but whereas the Total Lending to Total Deposit and Net Profit to Total Assets it has shown the fluctuating nature.

As far as, it is concerned, with view from correlation analysis; it shows that the results obtained has insignificant correlation between Level of NPA and ROA. Furthermore they have negative correlation between them.

Total Lending also indicate an increasing trend and have shown significant correlation between decreases of NPA. Moreover they have negative correlation between them showing that every time the Lending of the bank has increased the NPA has decreased at same time.

As far as NPA of the bank and the NPA of population banks is concerned they have positive correlation between them, and the result so obtained is found significant.

Himalayan Bank Limited

NPA can be seen fluctuating at same time and Net profit is increasing trend. The Net HBL has raising Total Assets, Total Deposits and Total Lending. On the other hand Profit of the bank has remained less than its NPA in FY 2061/62 to 2063/64, only at the FY 2064/65 and 2065/66 the bank has managed to increase its Net profit beyond its NPA. As the ratio between NPA to Total Lending is decreasing, Total Lending to Total Deposits and Net Profit and Total Assets it has followed the fluctuating trend from FY 2061/62-2065/66.

The result obtained through the correlation analysis of Level of NPA and ROA has significant relation. Furthermore they have high degree of negative correlation between them.

Similarly, the relation between Total Lending and NPA has also high degree of negative correlation. This shows whenever the Lending of the bank has increased the NPA has decreased. And the result so obtained is found is in significant.

Finally, the relation between NPA of the bank and the population has high degree of positive correlation. And the result so obtained is significant.

Nepal Investment Bank Limited

NIBL has raising Total Assets, Total Deposits, Total Lending and Net Profit trend. But at the same time NPA has shown the fluctuating trend. In FY 2061/62 the NPA is more than its Net Profit, but in later year it has remained less than its Net Profit.

The NPA to Total lending ration has decreased from 2.69% to 0.58% from FY 2061/62 to 2065/66. On the other hand the Total Lending to Total Deposit ratio it has followed the increasing trend and at the same time Net Profit to Total Assets ratio it has increased from 1.42% to 1.68 in the FY 2061/62 to FY 2065/66.

As far as, it is concerned, with view from correlation analysis; it shows that the results obtained has insignificant correlation between Level of NPA and ROA. Furthermore they have negative correlation between them.

Total Lending also indicate an increasing trend but haven't shown any significant correlation between increases of NPA. But they have negative correlation between them, showing that every time the Lending of the bank has increased the NPA has also decreases.

As far as NPA of the bank and the NPA of population banks is concerned they have positive correlation between them, and the result so obtained is found insignificant.

Bank of Kathmandu

In the case of BOK the Total Lending, Total Deposit, Total Lending and Net profit has gone on increasing but whereas the NPA of the bank is concerned it has fluctuated over the five year period. At the FY 2061/62 the NPA of the bank was very high 309 and FY 2065/66 the value was decreased to 199 which were very low.

The ratio between NPA to Total Lending is found very high in FY 2061/62 i.e. 4.99%, but it has decreased to 1.27% in the FY 2065/66. But the Total Lending to Total Deposits and Net Profit to Total Assets ratio have increased in FY 2061/62 to 2065/66.

The result obtained through analysis between the level of NPA and ROA has insignificant, but whereas relation between Total Lending and NPA, and NPA of the banks and population have insignificant correlation.

The relation between NPA and ROA has negative correlation. It concludes that whenever the level of NPA has increased ROA has decreased. Similarly, the correlation between Total Lending and NPA of the bank is found negative. In case of NPA of the bank and the population has positive correlation. This shows that the NPA of the bank has followed the trend that of the total NPA of population banks.

Nepal Bangladesh Bank

In case NBBL all the variables Total Assets, Total Deposits, Total Lending and Net Profit is more fluctuating over the FY 2061/62 to 2065/66. On the other hand the NPA of the bank has increased. The Net Profit of the bank is negative in the FY 2061/62 to 2063/64. In FY 2064/65 and FY 2064/65 it reached to 596 to 21, 158.

All the ratios via, NPA to Total Lending, Total Lending to Total Deposit and Net Profit to Total Assets Ratio are found fluctuating. In the FY 2065/66 the entire ratio has slightly increased as compared to its previous except NPA to Total Lending Ratio. As far as, it is concerned, with view from correlation analysis; it shows that the results obtained has insignificant correlation between Level of NPA and ROA. Furthermore they have negative correlation between them.

The relation between Total Lending and NPA has negative correlation. This shows whenever the Lending of the bank has increased the NPA has decreased. And the result so obtained is found is insignificant.

As the NPA of the bank and the NPA of population banks is concerned they have negative correlation between them, and the result so obtained is found insignificant.

4.4.2 Finding through Test of Hypothesis

i. Result from the test of hypothesis between NPA and Total Lending:

The 't' value for all the banks is higher than that given in the table; so it is concluded that there is significant relationship between the amount of NPA and total Lending.

ii. Result from the test of hypothesis between NPA of the bank and the population: The 't' value for all the banks are higher than that given in the table; so it is concluded that there is significant relationship the amount of NPA of the sample banks and the population.

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

A Commercial Bank means the bank, which deals with exchanging currency, accepting deposits, giving loans and doing other various commercial transactions. Therefore, the major function of commercial bank is to accept deposits and provide loans.

There is not so long history of commercial bank in Nepal. Nepal Bank Limited established in 1994 B.S. was the first commercial bank of the kingdom. But now there are seventeen commercial banks all over the country and they have been expanding their services by establishing branches in every corner of the country.

The assets of a commercial bank indicate the manner in which the funds entrusted to the bank are employed. The successful working of the bank depends on ability of the management to distribute the fund among the various kind of investments known as assets outstanding loan and advances of the bank. These assets constitute primary source of income to the bank. As being a business unit, a bank aims at making huge profit since loan and advances are more profitable than any other assets of the bank, it is willing to lend as much its fund as possible. But the bank has to be careful about the safety of such loans and advances. It means the bank has to be careful about the repayment of loan and interest giving loan. If a bank is too timid, it may fail to obtain the adequate return on the fund, which is confined to it for use. Similarly, if the bank is too liberal, it may easily impair its profits by bad debts. Therefore, banks should not forget

the reality that most of the bank failures in the world are due to shrinkage in the value of the loan and advances.

Despite of being loan and advances more profitable than other assets, it creates risk of non-repayment for the bank. Such risk is known as credit risk or default risk. Therefore, like other assets, the loan and advances are classified into performing and non-performing on the basis of overdue aging schedule. If the dues in the form of principal and the interest are not paid, by the borrower within a maturity period, that amount of principal and interest is called non-performing loan or assets. It means NPAs could wreck banks profitability both through loss of interest income and need to write off the principal loan amount. Performing Assets have multiple benefits to the company as well as to the society while non performing assets erode even existing capital of the bank.

Escalating level of NPAs has been becoming great problem in banking business in the world. In this context, Nepal cannot be run off from this situation. The level of NPA in Nepalese banking business is very alarming. It is well known fact that the bank and financial institution in Nepal have been facing the problem of swelling non-performing assets and the issue is becoming more and more unmanageable day by day. We are well known from different financial reports, newspapers and news that the total NPA in Nepalese banking system is about 30 Billion (Nepal Rastra Bank, 2005), while it is very worse in case of two largest commercial banks RBB and NBL.

Therefore, this study is concerned to find out the level of NPA and its effects on the return on assets and the other factors of the Nepalese commercial banks. This study especially focuses on six commercial banks of Nepal, viz. NABIL, SCBNL, HBL, BOK, NBBL and NIBL only, out of the 31 commercial banks op-

erating in the banking industry of Nepal.

5.2 Conclusion

The Correlation coefficient between NPA and ROA mostly came out to be negative except for NABIL. This shows that increase in profitability is affected by the amount on Non Performing Assets. These finding supports the theory that, higher the NPA lower will be the ROA and vice-versa.

The correlation coefficient between Total Lending and NPA is negative for most of the banks except for NIBL. Negative correlation explains that if the Total Lending increases it leads to decrease in NPA. These finding came out to be insignificant for most of the banks. This leads us to the induction, that NPA and Total Lending were two different entities of the bank, which had little or no relation to each other in the progression or digression of their values.

The correlation between NPA of sample and population banks are positive except than that of NIBL and NBBL. The positive relationship explain that increase in NPA of sample banks also leads to the increase in NPA of the population, which is agreed upon with the practice.

Finally, the test of hypothesis between NPA and Total Lending of the banks is found true. Thus there is a significance relation between these two variable are significant. On the other hand the test of hypothesis between NPA and that of population is found acceptable. This shows that there is a significance relation between two. That is every raise or fall in the NPA of sample banks has also effect in the NPA of the total population.

5.3 Recommendations

High level of non-performing assets not only decreases the profitability of the

banks but also affect the entire financial as well as operational health of the country. If the NPA were not controlled immediately, it would be proved as a curse for the banks in near future. Therefore, following are some of the recommendations, which will help to reduce the level of NPA of the Nepalese commercial banks:

➤ **Take Necessary Steps Toward Recovering Bad Debt:**

The NPA of the bank has the direct effect on its profitability. More the NPA of the bank the less will be its profitability. Those banks, which have high level of NPA, should take necessary action towards recovering their bad loans as soon as possible. In case of default to repay the loan by the borrowers, the banks should dispose of the collateral taken from them and recover the principal and the interest amount thereof. Similarly, write-off should be done regularly. Once the account of a borrower gets dead, it's a business loss.

It has to provide for and removed from the assets without bailing out the default borrower.

➤ **Take Proper Control in Loan Management:**

The increase in the volume of Total Lending is not the reason in decrease of NPA or increment of the profitability of the banks. As seen the case of BOK and NBBL there has been increase in the level of NPA even there Total Lending has increased. This is due the effect of the bad loans provided by the banks.

- Being loan a risky asset, efforts should be made to have proper control in every steps of loan management. The banks should establish separate department for credit appraisal, documentation, disbursement, rapport building, inspection and recovery of loan which have possibility of finding mistakes of one department by the others, so that the effectiveness can be achieved.
- Loan must be given only if the banker is satisfied that the borrower can

repay money from the cash flow generated from operating activities. However, the banks want to ensure that their loan is repaid even in case of failure of business. To protect banks from such happenings, the banks take collateral from the borrower so that in the event of default this collateral is disposed for the recovery of loan. Therefore, banks should take enough collateral so that the Bank at least will be able to recover its principal and interest amount in case of failure of the borrower to repay the loan.

- Lack of proper financial analysis of the borrower by the banks, is one of the major cause behind increasing NPA of Nepalese commercial banks. Therefore, proper financial analysis should be performed before giving loan to the borrower.

➤ **Others:**

Besides from above following are some other points that should be taken for the control of NPA in the bank.

- Control mechanism of the bank should be managed properly. Black listed customers should not be given the new loan, as it would lead to the same situation to the bank.
- Diversification of the loan should be managed by the individual banks. In the context of Nepal it is provided to the borrowers who often go to the bank not in the new sector. Default by the older borrower can be found, which should be avoided.
- Political influences in the loan disbursement should be avoided as it may lead to worse condition to the bank as it may increase the non-performing loan of the bank.

➤ **Future Scope of Research:**

Present study lacks in the depth and exposition of the actual individual policies of the sample banks, due to specific monitoring and evaluation of the NPA and profitability of the commercial banks could not be carried out and the concealed nature of the banks individual policies and unwillingness in part of the banks to disclose them. Thus, actual specific policies of each individual bank couldn't be obtained. But to serve the purpose of the study, this research relates the relevance of the findings from use of statistical tools. Future studies are suggested to determine, if possible analyze such individual policies.

This study due to the constraint of time and data has not been able to analyze each and every aspect relating to the NPA of the commercial banks. This leaves the door open for further research on the subject.

BIBLIOGRAPHY

Books and Articles

- Adhikari, N.K. (1998). *Theory and Practice of Financial Management*. Kathmandu: Sukunda Prakashan.
- Baidhaya, S. (1996). *Banking Management*. Kathmandu: Monitor Nepal.
- Basyal, T.R. (2057). *Reforming Nepal's Financial System: Rational and Measures*. Kathmandu: Nepal Rastra Bank Annual Bulletin.
- Bhandari, D.R. (2003). *Banking and Insurance Principles and Practices*. Kathmandu: Asmita Publication.
- Bidani, S.N. (2003). *Managing Non Performing Assets*, New Delhi: Vision Books Publishers.
- Boerne Vs. Colwell Co. (1997). *Constitutional Government*. The American Experience. Joshi, P.R. (2003). *Research Methodology*. (3rd Edition). Kathmandu: Buddha Academic Publishers and Distributors (P) Ltd.
- Kerlinger, F.N. (1986). *Foundation of Behavioral Research*. (3rd edition). New York: Holt, Rinehart & Winston.
- Pant, P.R. (2008). *Social Science Research and Thesis Writing*. (5th edition). Kathmandu: Buddha Publication.
- Pradhan, S.M (2001), *How to Tackle NPA*. Kathmandu: The Kathmandu Post. Reddy, P.K. (1998). *F & S Index United States Volume 38*. Information Access Co.
- Rose, P.S. (2000). *Financial Institutions and Markets*. (8th edition). New York: McGraw Hill Books Co.
- Sharma P.K. & Chaudhary, A.K. (2007). *Statistical Methods*. Kathmandu: Khanal Books Prakashan.
- Sthapit, A. B. (2004). *Statistical Methods* Kathmandu: Buddha Academic Publishers & distributors.
- Shrestha, M.K. & Bhandari, D.B. (2005). *Financial Markets and Institutions*. Kathmandu: Asmita Books Publishers and Distributors.
- Shrestha, M.S. (2007). *Fundamentals of Banking*. (2nd edition). Kathmandu: Buddha

Academic Enterprises Pvt. Ltd.

Singh, M. (2002). *Directive Reserve Bank of India*. New Delhi.

Tannan, M.L. & Dutta, C.R. (1997). *Tannan's Banking Law and Practices in India*. New York: Indian Law House.

Weston, J.F. & Brigham, E.F. (1990). *Managerial Finance*. California: University of California.

Thesis

Ghimire, G. (2005). *Non Performing Assets of Commercial Banks: Causes and Effects*.

An Unpublished Master Degree Thesis, Submitted to Faculty of Management, Nepal Commerce Campus, T.U.

Khadka, D.K. (2004). *Non-Performing Assets of Nepalese Commercial Banks* An Unpublished Master Degree Thesis, Submitted to Faculty of Management, Shanker Dev Campus.

Shrestha, N. (2004). *A Study on Non Performing Loans and Loan Loss Provisioning of Commercial Banks*. An Unpublished Master Degree Thesis, Submitted to Faculty of Management, Shanker Dev Campus.

Journals & Reports:

Bank of Kathmandu Limited (2061/62 to 2065/66). *Annual Reports to Share Holders*. Kathmandu.

Himalayan Bank Limited (2061/62 to 2065/66). *Annual Reports to Share Holders*. Kathmandu.

Nabil Bank Limited (2061/62 to 2065/66). *Annual Reports to Share Holders*. Kathmandu.

Nepal Bangladesh Bank Limited (2061/62 to 2065/66). *Annual Reports to Share Holders*. Kathmandu.

Nepal Investment Bank Limited (2061/62 to 2065/66). *Annual Reports to Share Holders*. Kathmandu.

Nepal Rastra Bank (2010). *Banking and Financial Statistics*. Kathmandu.

Standard Chartered Bank Nepal Limited (2061/62 to 2065/66). *Annual Reports to Share Holders*. Kathmandu.

Websites:

<http://www.bok.com.np>

[http:// www.hbl.com.np](http://www.hbl.com.np)

<http:// www.nbbl.com.np>

<http://www.nibl.com.np>

<http://www.ekantipur.com.np>

<http://www.google.com/search>

<http://www.nabilbank.com.np>

<http://www.nepalnews.com.np>

<http://www.nrb.org.np>

<http://www.standardchartered.com/np>

<http://www.wikipedia.org.bank>

Annexure I

Calculation of the correlation coefficient between the NPA to total lending and the ROA of different Banks:

a) Nabil Bank Limited

X= NPA to Total Landing

Y= Net Profit to Total Assets

FY	X	Y	X ²	Y ²	XY
2061/062	1.32	3.06	1.742	9.363	4.039
2062/063	1.38	3.23	1.904	10.43	4.457
2063/064	1.12	2.72	1.254	7.398	3.0464
2064/065	0.74	2.32	0.547	5.382	1.716
2065/066	0.80	2.55	0.640	0.5025	2.04
Total	5.36	13.88	6.085	39.08	15.298

$$\bar{X} = \frac{\sum X}{N} = \frac{5.36}{5} = 1.072$$

Now,

$$r = \frac{n \sum XY - \sum X \times \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

$$r = \frac{5 \times 15.298 - 5.36 \times 13.88}{\sqrt{5 \times 6.085 - (5.36)^2} \sqrt{5 \times 39.08 - (39.08)^2}}$$

$$\therefore r = 0.97$$

Coefficient of Determination

$$(r)^2 = (0.97)^2$$

$$= 0.94$$

Calculation of P.E.

$$SE. = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.92}{\sqrt{5}}$$

$$= 0.0268$$

$$\therefore P.E = 0.6745 \times SE$$

$$= 0.6745 \times 0.0268$$

$$= 0.0180$$

b) Standard Chartered Bank

X=NPA to total landing

Y = Net profit to total Assets

FY	X	Y	X ²	Y ²	XY
2061/062	2.69	2.48	7.24	6.15	6.67
2062/063	2.13	2.56	4.54	6.55	5.15
2063/064	1.83	2.42	3.35	5.86	4.43
2064/065	0.92	2.46	0.85	6.05	2.26
2065/066	0.66	2.53	0.44	6.40	1.67
Total	8.23	12.45	16.42	31.01	20.18

Now,

$$r = \frac{n \sum XY - \sum X \times \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

$$r = \frac{5 \times 20.18 - 8.23 \times 12.45}{\sqrt{5 \times 16.42 - (8.23)^2} \sqrt{5 \times 31.01 - (12.45)^2}}$$

$$r = -0.3772$$

$$\text{or, } r = -0.38$$

Coefficient of Determination (r^2)

$$= (0.38)^2$$

$$= 0.143$$

Calculation of P.E.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.143}{\sqrt{5}} = 0.38$$

$$P.E. = 0.6745 \times SE$$

$$= 0.6745 \times 0.30$$

$$= 0.256$$

c) **Himalayan Bank Limited**

X= NPA to total landing

Y= Net profit to total Assets

FY	X	Y	X ²	Y ²	XY
2061/062	7.44	1.11	55.35	1.23	8.19
2062/063	6.60	1.55	43.56	2.40	10.23
2063/064	3.61	1.47	13.03	2.16	5.31
2064/065	2.36	1.76	5.57	3.09	4.15
2065/066	2.16	1.91	4.67	3.65	4.13
Total	22.17	7.8	122.18	12.53	32.01

Now,

$$r = \frac{N \sum XY - \sum X \cdot \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

$$= \frac{r = 5 \times 32.01 - 22.17 \times 7.8}{\sqrt{5 \times 122.18 - (22.17)^2} \sqrt{5 \times 12.53 - (7.8)^2}}$$

$$\therefore r = -0.834$$

$$\text{Coefficient of Determinant } (r)^2 = (-0.834)^2$$

$$= 0.69$$

Calculation of P.E.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.69}{\sqrt{5}} = 0.138$$

$$= 0.138$$

$$\therefore PE = 0.6745 \times 0.138$$

$$= 0.093$$

d) Nepal Investment Banks

Calculation of Correlation coefficient between the NPA to total lending and (ROA) NP to Total Assets.

X= NPA total Lending

Y= Net Profit to total Assets

FY	X	Y	X ²	Y ²	XY
2061/062	2.69	1.42	7.24	2.02	3.82
2062/063	2.07	1.61	4.28	2.59	3.33
2063/064	2.37	1.79	5.62	3.20	4.24
2064/065	1.12	1.77	1.25	3.13	1.98
2065/066	0.58	1.68	0.34	2.82	0.98
Total	8.83	8.27	18.73	13.76	14.35

Where,

$$r = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2} \sqrt{n\sum Y^2 - (\sum Y)^2}}$$
$$= \frac{5 \times 14.35 - 8.83 \times 8.27}{\sqrt{5 \times 18.73 - (8.83)^2} \sqrt{5 \times 13.76 - (8.27)^2}}$$

$$r = -0.4785$$

$$\text{or, } -0.48$$

$$\text{Now, Coefficient of Determinant } (r) = (-0.48)^2$$
$$= 0.2304$$

Calculation of P.E.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.23}{\sqrt{5}} = 0.344$$

$$\therefore \text{P.E.} = 0.6745 \times SE(r)$$

$$= 0.6745 \times 0.3443$$

$$= 0.2322$$

e) Bank of Kathmandu

Calculation of correlation coefficient between the total NPA total landing and (ROA) net profit total Assets,

X= NPA to total landing

Y= net Profit to total Assets.

F/Y	X	Y	x^2	Y^2	XY
2061/62	4.09	1.42	24.90	2.02	7.09
2062/63	2.72	1.65	7.40	2.72	4.49
2063/64	2.51	1.80	6.30	3.24	4.52
2064/65	1.86	2.04	3.46	4.16	3.79
2065/66	1.27	2.25	1.60	5.06	2.86
	13.35	9.16	43.66	17.20	22.75

$$r = \frac{\sum xy - \sum x \sum y}{\sqrt{\sum x^2 - (\sum x)^2} \sqrt{\sum y^2 - (\sum y)^2}}$$

$$r = \frac{5 \times 22.75 - 13.35 \times 9.16}{\sqrt{5 \times 43.66 - (13.35)^2} \sqrt{5 \times 17.20 - (9.16)^2}}$$

$$r = -0.9311 \quad r = -0.93$$

Now coefficient of determinant $(r)^2 = (-0.93)^2$

$$r^2 = 0.8649$$

calculation of P.E.

$$SE(r) = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.86}{\sqrt{5}} = 0.0626$$

$$\text{i.e. P:E.} = 0.6765 \times SE$$

$$= 0.6745 \times 0.0626$$

$$= 0.04223$$

f) Nepal Bangladesh Bank

X= NPA to total landing

Y= Net Profit to total Assets

FY	X	Y	X ²	Y ²	XY
2061/062	19.04	0.00	362.52	0	0
2062/063	27.12	0	755.49	0	0
2063/064	39.66	0	1572.92	0	0
2064/065	31.73	6.35	1006.79	40.32	201.49
2065/066	19.80	18.04	392.04	325.44	357.19
Total	137.35	24.39	4069.76	365.76	558.68

Correlation Coefficient (r)

$$r = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

$$= \frac{5 \times 558.68 - 137.35 \times 24.39}{\sqrt{5 \times 4069.76 - (13735)^2} \sqrt{5 \times 365.76 - (24.39)^2}}$$

$$= -0.41$$

$$\therefore r = -0.41$$

Coefficient of Determination ((r)²)

$$r^2 = (-0.41)^2$$

$$= 0.17$$

Calculation of P.E.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.17}{\sqrt{5}} = 0.37$$

$$\therefore P.E = 0.6745 \times 5E$$

$$= 0.6745 \times 0.57 = 0.25$$

Annexure II

Calculation of the correlation coefficient between the Total Lending and the NPA of different Banks:

a) **Nabil bank Ltd**

X = NPA of the Bank

Y = Total Lending

FY	X	Y	X ²	Y ²	XY
2061/062	1.44	109.46	2.073	11,981.49	157.62
2062/063	1.83	132.79	3.35	17,633.18	243.00
2063/064	1.78	159.03	3.168	25,290.52	283.07
2064/065	1.61	217.59	2.59	47,345.40	350.40
2065/066	2.24	279.99	5.017	78,394.40	627.18
Total	8.90	898.86	16.198	180,645.01	1661.27

Now,

$$\bar{X} = \frac{\sum X}{N} = \frac{8.90}{5} = 1.78$$

$$\bar{Y} = \frac{898.86}{5} = 179.77$$

$$r = \frac{n \sum XY - \sum X \times \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2}}$$

$$r = \frac{5 \times 1661.27 - 8.90 \times 898.86}{\sqrt{5 \times 16.198 - (8.90)^2} \sqrt{5 \times 180,645.01 - (898.86)^2}}$$

$$\therefore r = 0.74$$

X - \bar{X}	Y - \bar{Y}	(X - \bar{X}) ²	(Y - \bar{Y}) ²
-0.34	-70.31	0.1156	4,943.49
0.05	-46.98	0.0025	2,207.12
0	-20.74	0	430.15

-0.17	37.82	0.0298	1430.35
0.46	100.22	0.2116	10,044.04
		0.3586	19,055.05

Coefficient of Determinant

$$r^2 = (0.74)^2 = 0.55$$

Calculation of P.E.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.92}{\sqrt{5}}$$

$$\therefore PE = 0.6745 \times SE$$

$$= 0.6745 \times 0.20$$

$$= 0.1357$$

b) Standard Chartered bank

Calculation of the Correlation Coefficient between the total Lending and NPA of BANK.

Where,

X= NPA of Bank

Y= Total Lending of Bank

FY	X	Y	X ²	Y ²	XY
2061/062	2.26	84.21	5.11	7091.32	190.51
2062/063	1.96	92.06	3.84	8475.04	180.44
2063/064	1.97	107.90	3.88	11,642.42	212.56
2064/065	1.29	139.64	1.66	19,499.33	180.14
2065/066	0.90	138.81	0.81	19,268.23	124.93
Total	8.38	562.62	15.30	65,976.33	888.38

X- \bar{X}	Y- \bar{Y}	(X- \bar{X}) ²	(Y- \bar{Y}) ²
0.58	-28.51	0.3364	801.46

0.28	-20.46	0.0784	418.61
0.29	-4.62	0.0841	21.34
-0.39	27.12	0.1521	735.49
-0.78	26.29	0.6084	691.16
		1.287	2,668.06

Now,

$$\text{Now, } \bar{X} = \frac{\sum X}{N} = \frac{8.38}{5} = 1.68$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{562.62}{5} = 112.52$$

Correlation coefficient (r)

$$r = \frac{n \sum XY - \sum X \times \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

$$r = \frac{5 \times 888.38 - 8.38 \times 562.62}{\sqrt{5 \times 15.30 - (8.38)^2} \sqrt{5 \times 65,976.33 - (562.62)^2}}$$

$$r = -0.94$$

$$\text{Coefficient of Determinant } (r)^2 = (0.941)^2$$

$$= 0.885$$

Calculation of P.E.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.885}{\sqrt{5}} = 0.38$$

$$= 0.05$$

$$P.E. = 0.6745 \times 0.051$$

$$= 0.0344$$

c) **Himalayan Bank Ltd.**

Calculation Correlation Coefficient between total Landing and NPA of Banks

X = NPA of Bank

Y = Total Landing of Bank

FY	X	Y	X ²	Y ²	XY
2061/062	10.01	134.51	100.20	10,092.94	1346.45
2062/063	10.41	157.62	108.36	24,843.99	1640.82
2063/064	6.42	177.94	41.23	31,661.66	1142.37
2064/065	4.77	201.80	22.75	40,723.24	962.58
2065/066	5.51	255.20	30.36	65,127.04	1406.15
Total	37.12	927.07	302.90	180,448.87	6498.37

X- \bar{X}	Y- \bar{Y}	(X- \bar{X}) ²	(Y- \bar{Y}) ²
2059	-50.91	6.71	2592
2.99	-27.80	8.94	772.84
-1	-7.48	1	55.95
-2.65	16.38	7.02	268.30
-1.91	69.78	3.65	4869.25
		27.32	8558.34

$$\bar{X} = \frac{\sum X}{N} = \frac{837.12}{5} = 7.42$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{927.07}{5} = 185.42$$

Now Correlation Coefficient (r)

$$r = \frac{N \sum XY - \sum X \cdot \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

$$r = \frac{56498.37 - 37.12 \times 927.07}{\sqrt{5 \times 302.90 - (3712)^2} \sqrt{5 \times 180,448.87 - (927.07)^2}}$$

$$\therefore r = -0.794$$

$$\text{Coefficient of Determinant } (r)^2 = (-0.794)^2$$

$$= 0.63$$

Calculation P.E.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1.063}{\sqrt{5}} = 0.165$$

$$\begin{aligned} \therefore \text{P.E.} &= 0.6745 \times 5E \\ &= 0.6745 \times 0.165 \\ &= 0.11 \end{aligned}$$

d) Nepal Investment Bank

Calculation of Coefficient between total lending and the NPA and of (NIBL) Bank.

FY	X	Y	X ²	Y ²	XY
2061/062	2.81	104.54	7.8961	10928.612	293.7574
2062/063	2.72	131.78	7.3984	17365.968	358.4416
2063/064	4.22	177.70	17.8084	31577.29	749.894
2064/065	3.10	275.29	9.61	75784.584	853.399
2065/066	2.14	368.27	4.5796	135622.79	788.0978
Total	14.99	1057.358	47.2925	271279.25	3043.59

$$\bar{X} = \frac{\sum X}{N} = \frac{14.99}{5} = 2.998$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{1057.58}{5} = 211.52$$

X- \bar{X}	Y- \bar{Y}	(X- \bar{X}) ²	(Y- \bar{Y}) ²
-0.188	-106.98	0.0353	11,444.72
-0.278	-79.74	0.07728	6358.47
1.222	-33.82	1.4932	1143.79
0.102	63.77	0.01040	4066.61
-0.858	156.75	0.7362	24,570.56
		2.3524	47,584.15

Now, Correlation (r) =

$$\begin{aligned} r &= \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}} \\ &= \frac{5 \times 3043.53 - 14.99 \times 1057.58}{\sqrt{5 \times 47.29 - (14.99)^2} \sqrt{5 \times 271,279.24 - (1057.58)^2}} \end{aligned}$$

$$\therefore r = -0.37969$$

Or, -038

Now, Coefficient of Determinant (r) = (-0.38)²

Calculation of PE.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.144}{\sqrt{5}} = 0.3828$$

$$\therefore P.E. = 06745 \times 5E(r)$$

$$= 0.6745 \times 0.3828$$

$$= 0.2582$$

e) Bank of Kathmandu

Calculation of the correlation coefficient between total landing and NPA of Bank

X = NPA of the bank

Y = total landing of Bank

F/Y	X	Y	X ²	Y ²	XY
2061/62	3.09	61.82	9.548	3821.75	191.02
2062/63	2.04	74.89	4.16	5608.51	152.78
2063/64	2.49	96.94	5.90	9397.36	235.56
2064/65	2.37	127.48	5.61	16,251.15	302.12
2065/66	1.99	149.46	3.96	22,338.29	297.43
	11.92	510.59	29.18	57,417.02	1178.91

$$\bar{x} = \frac{\sum x}{n} = \frac{11.92}{5} = 2.384$$

$$\bar{y} = \frac{\sum Y}{n} = \frac{510.59}{5} = 102.118$$

F/Y	X- \bar{X}	Y- \bar{Y}	(X- \bar{X}) ²	(Y- \bar{Y}) ²
2061/62	0.706	-40.298	0.4984	1623.93
2062/63	-0.3214	-27.22	0.1183	741.36
2063/64	0.046	-5.176	0.00211	26.82
2064/65	-0.014	25.3621	0.00019	643.23
2065/66	-0.394	47.34	0.1552	2241.26
			0.7742	5276.60

Where,

$$r = \frac{\sum xy - \sum x \cdot \sum y}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{\sum y^2 - (\sum y)^2}}$$

$$\frac{5 \times 1178.91 - 11.92 \times 510 - 59}{\sqrt{5 \times 29.18 - (11.92)^2} \sqrt{5 \times 57.417.02 - (510.59)^2}}$$

$$r = 0.5996 \text{ or } -0.60$$

$$r^2 = (0.60)^2$$

$$= 0.3595$$

$$\text{P.C. } 0.6765 \times \text{SE}$$

$$56(r) = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.36}{\sqrt{5}} = 0.2862$$

$$\text{P.E.} = 0.6765 \times 0.2862$$

$$= 0.1930$$

f) Nepal Bangladesh Bank

Calculation of Correlation Coefficient between NPA of Bank and Total Landing of Bank

X = NPA of Bank

Y = Total Landing of Bank

FY	X	Y	X ²	Y ²	XY
2061/062	18.33	278.78	335.98	77718.29	5110.04
2062/063	29.27	255.80	862.95	65433.64	7487.27
2063/064	36.46	242.16	1329.33	58641.47	8829.15
2064/065	29.45	186.49	867.30	34778.57	5492.13
2065/066	23.65	135.57	559.32	18379.22	3206.23
Total	137.16	1098.80	3947.57	254951.14	30124.82

X- \bar{X}	Y- \bar{Y}	(X- \bar{X}) ²	(Y- \bar{Y}) ²
-9.1	2.08	82.81	4.3264
1.84	2.77	3.3856	7.6729
9.03	-2.5	81.5409	6.25
2.02	0.51	4.0804	0.2601
-3.78	-2.89	14.2884	8.3521
0	0	188.105	28.862

$$\bar{X} = \frac{\sum X}{N} = \frac{137.16}{5} = 27.43$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{470.92}{5} = 94.19$$

Now, Correlation Between, NPA and Total landing of bank.

$$r = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

$$= \frac{5 \times 12,893.83 - 137.16 \times 470.92}{\sqrt{5 \times 3947.57 - (137.16)^2} \sqrt{5 \times 44,379.98 - (470.92)^2}}$$

$$r = -0.44$$

$$\text{Coefficient of Determinant } (r)^2 = (-0.44)^2$$

$$= 0.19$$

Calculation of P.E.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.19}{\sqrt{5}} = 0.36$$

$$PE = 0.6745 \times SE$$

$$= 0.6745 \times 0.36$$

$$= 0.2428$$

Annexure III

Calculation of the correlation coefficient between the NPA of the bank and the population:

a) Nabil Bank

Correlation Coefficient Between the NPA of the Bank and the Population NPA of Banks

Where,

X= NPA of the Bank

Y = Total NPA Population of Banks

FY	X	Y	X ²	Y ²	XY
2061/062	1.44	278.78	2.073	77,718.29	401.44
2062/063	1.83	255.80	3.35	65,433.64	468.11
2063/064	1.78	242.16	3.168	58,641.47	431.04
2064/065	1.61	186.49	2.59	34,778.52	300.25
2065/066	2.24	135.37	5.017	18,379.22	303.68
Total	8.90	1098.50	16.198	2,54,951.14	1473.44

X- \bar{X}	Y- \bar{Y}	(X- \bar{X}) ²	(Y- \bar{Y}) ²
-0.34	59.02	0.1156	3483.36
0.05	36.04	0.0025	1298.90
0	22.4	0	501.76
-0.17	-33.27	0.0298	1106.90
0.46	-84.19	0.2116	7087.95
Total		0.3586	13,478.87

Now,

$$\bar{X} = \frac{\sum X}{N} = \frac{8.90}{5} = 1.78$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{1098.5}{5} = 219.76$$

Correlation coefficient (r)

$$r = \frac{n \sum XY - \sum X \times \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

$$r = \frac{5 \times 1473.44 - 8.90 \times 1098.50}{\sqrt{5 \times 16.198 - (8.90)^2} \sqrt{5 \times 2,54,951.14 - (1098.50)^2}}$$

$$\therefore r = -0.74$$

$$\text{Coefficient of Determinant } (r)^2 = (-0.74)^2$$

$$= 0.55$$

Calculation of P.E.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.55}{\sqrt{5}}$$

$$= 0.20$$

$$\therefore \text{P.E.} = 0.6745 \times 5E$$

$$= 0.6745 \times 0.20$$

$$= 0.3157$$

b) Standard chartered bank

Calculation of Correlation Coefficient between the NPA of the Bank and Population NPA of bank

X = NPA of Sample Bank

Y = Total NPA Population of Bank

FY	X	Y	X ²	Y ²	XY
2061/062	2.26	278.78	5.11	77,718.29	630.04
2062/063	1.96	255.50	3.84	65,433.64	501.19
2063/064	1.97	242.16	3.88	58,641.47	477.10
2064/065	1.29	186.49	1.66	34,778.52	240.05
2065/066	0.90	135.37	0.81	18,379.22	122.01
Total	8.38	1098.80	15.30	2,54,951.14	1970.39

X- \bar{X}	Y- \bar{Y}	(X- \bar{X}) ²	(Y- \bar{Y}) ²
0.58	59.02	0.3364	3483.33
0.28	36.04	0.0784	1298.90
0.29	22.40	0.0841	501.76
-0.39	-33.27	0.1521	1106.90
-0.78	-84.19	0.6084	7,087.97
		1.287	13,478.87

Now,

$$\text{Now, } \bar{X} = \frac{\sum X}{N} = \frac{8.38}{5} = 1.68$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{1098.8}{5} = 219.76$$

Correlation coefficient (r)

$$r = \frac{n \sum XY - \sum X \times \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2}}$$

$$r = \frac{5 \times 1970.39 - 8.38 \times 1098.80}{\sqrt{5 \times 15.31 - (8.38)^2} \sqrt{5 \times 2,54,951.12 - (1098.8)^2}}$$

$$\therefore r = 0.993$$

Coefficient of Determinant (r)²

$$r^2 = (0.993)^2 = 0.986$$

Calculation of P.E.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.986}{\sqrt{5}} = 0.0089$$

$$P.E = 0.6745 \times SE$$

$$= 0.6745 \times 0.0089$$

$$= 0.0060$$

c) **Himalayan Bank**

Correlation Coefficient between NPA and population NPA of Banks

X = NPA of Sample of Bank

Y = Total NPA of Population Bank

FY	X	Y	X ²	Y ²	XY
2061/062	10.01	278.78	100.20	77,718.29	2790.59
2062/063	10.41	255.80	108.36	65,433.64	2662.88
2063/064	6.42	242.16	41.23	58,641.47	1554.67
2064/065	4.77	186.49	22.75	34,778.52	889.56
2065/066	5.51	135.57	30.36	18,339.22	746.99
Total	37.12	1098.80	302.90	2,54,951.14	8,644.69

$$\bar{X} = \frac{\sum X}{N} = \frac{37.12}{5} = 7.42$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{1098.80}{5} = 219.76$$

$X-\bar{X}$	$Y-\bar{Y}$	$(X-\bar{X})^2$	$(Y-\bar{Y})^2$
2.59	59.02	6.71	3483.33
2.99	36.04	8.94	1298.90
-1	22.40	1	501.76
-2.65	-33.27	7.02	1106.90
-1.91	-84.19	3.65	7087.97
		27.32	13,478.87

Correlation Coefficient (r)

$$r = \frac{N \sum XY - \sum X \cdot \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

$$r = \frac{5 \times 8644 - 37.12 \times 1098.80}{\sqrt{5 \times 302.90 - (3712)^2} \sqrt{5 \times 2,54,951.14 - (1098.80)^2}}$$

$$r = 0.8025$$

Coefficient of Determinant (r)

$$r^2 = (0.8028)^2 = 0.64$$

Calculation of P.E.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.64}{\sqrt{5}} = 0.1609$$

$$\therefore PE. = 0.6745 \times 0.1609$$

$$= 0.1085$$

d) **Nepal Investment Bank**

X = NPA of the Bank

Y = Total NPA Population of Banks

FY	X	Y	X ²	Y ²	XY
----	---	---	----------------	----------------	----

2061/062	2.81	78.78	7.90	77,718.29	783.37
2062/063	2.72	255.80	7.40	65,433.64	695.78
2063/064	4.22	242.16	17.80	58,641.47	1021.92
2064/065	3.10	186.49	9.61	34,778.52	578.11
290.122065/066	2.14	135.57	4.58	18,379.22	290.12
Total	14.99	1098.80	47.29	254,951.14	3369.30

$$\bar{X} = \frac{\sum X}{N} = \frac{14.99}{5} = 2.998$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{1098.8}{5} = 219.76$$

$X - \bar{X}$	$Y - \bar{Y}$	$(X - \bar{X})^2$	$(Y - \bar{Y})^2$
-0.188	59.02	0.0353	3483.36
-0.278	36.04	0.07728	1298.90
1.222	22.4	1.4932	501.76
0.102	-33.27	0.01040	1106.90
-0.858	-84.19	0.7362	7087.95
		2.3524	13,478.87

$$\text{Correlation Coefficient (r)} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

$$= \frac{5 \times 3369.30 - 14.99 \times 1098.80}{\sqrt{5 \times 47.29 - (14.99)^2} \sqrt{5 \times 254,951.14 - (1098.8)^2}}$$

$$r = 0.4217$$

$$\text{Coefficient of Determinant (r)}^2 = (0.4217)^2$$

$$= 0.1778$$

$$\text{P.E} = 0.6745 \times 6 \text{Er}$$

$$\text{SE} = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.1778}{\sqrt{5}} = 0.3677$$

$$\therefore \text{PE} = 0.6745 \times 0.3677$$

$$= 0.2450$$

e) **Bank of Kathmandu**

Calculation of correlation of coefficient between the NPA of the bank and the population NPA of Nepales commercial banks

Where,

X = NPA of the bank

Y = Total NPA Population

F/Y	X	Y	X ²	Y ²	xy
2061/62	3.09	278.78	9.55	77,718.29	861.43
2062/63	2.04	255.80	4.16	65,433.64	521.83
2063/64	2.43	242.16	590	58641.47	588.45
2064/65	2.37	186.49	5.61	34,778.52	509.12
2065/66	1.99	135.57	3.96	18,379.22	269.78
Total	11.92	1098.80	29.18	254,951.14	2750.61

$$\bar{X} = \frac{\sum X}{n} = \frac{11.92}{5} = 2.384$$

$$\bar{Y} = \frac{\sum Y}{n} = \frac{1098.80}{5} = 219.76$$

F/Y	X- \bar{X}	Y- \bar{Y}	(X- \bar{X}) ²	(Y- \bar{Y}) ²
2061/62	0.706	59.02	0.4984	3483.36
2062/63	-0.34	36.04	0.1183	1298.90
2063/64	0.046	22.4	0.004	501.76
2064/65	0.014	-33.27	0.00019	1106.90
2065/66	-0.394	84.19	0.1552	7087.95
Total			0.7742	13478.87

$$\text{Correlation (r)} = \frac{\sum xy - \sum x \cdot \sum y}{\sqrt{n \sum x^2 - (\sum X)^2} \sqrt{\sum y^2 - (\sum Y)^2}}$$

$$= \frac{5 \times 2750.61 - 11.92 \times 1098.8}{\sqrt{5 \times 29.18 - (11.92)^2} \sqrt{5 \times 254,951.14 - (1098.8)^2}}$$

$$\therefore r = 0.6258 \quad r = 0.636$$

$$\text{Determinant } r^2 = (0.63)^2 = 0.3969$$

$$P. E. = 0.6745 \times SE$$

$$SE. = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.3969}{\sqrt{5}}$$

$$=0.2697$$

g) Nepal Bangladeshs Bank

X= NPA of Sample bank

Y= Total NPA of Population Banks

FY	X	Y	X ²	Y ²	XY
2061/062	18.33	278.78	335.99	77718.288	5110.04
2062/063	29.27	255.8	856.73	65433.64	7487.27
2063/064	36.46	242.16	1329.33	58641.466	8829.15
2064/065	29.45	186.49	867.3	34778.52	5492.13
2065/066	23.65	135.57	559.32	18379.225	3206.23
Total	137.16	1098.8	335.99	254951.14	30124.82

X- \bar{X}	Y- \bar{Y}	(X- \bar{X}) ²	(Y- \bar{Y}) ²
-9.1	59.02	82.81	3483.36
1.84	36.04	3.3856	1298.90
9.03	22.40	81.5409	501.76
2.02	-33.27	4.0804	1106.90
-3.78	-84.19	14.2884	7087.95
0		188.105	13,478.87

$$\bar{X} = \frac{\sum X}{N} = \frac{137.16}{5} = 27.43$$

$$\bar{Y} = \frac{\sum Y}{N} = \frac{1098.80}{5} = 219.76$$

Now,

$$r = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2} \sqrt{n\sum Y^2 - (\sum Y)^2}}$$

$$= \frac{5 \times 30,124.82 - 137.16 \times 1098.80}{\sqrt{5 \times 3947.57 - (137.16)^2} \sqrt{5 \times 2,54,951.14 - (1098.8)^2}}$$

$$r = -0.00874$$

Coefficient of Determinant

$$r^2 = -(0.00847)^2$$

$$= 0.0000763$$

Now, Calculation of P.E.

$$SE = \frac{1-r^2}{\sqrt{n}} = \frac{1-0.0000763}{\sqrt{5}} = 0.447$$

$$\therefore \text{P.E.} = 0.6745 \times SE$$

$$= 0.6745 \times 0.447$$

$$= 0.3016$$

Annexure IV

Test of Hypothesis

1. Is there any significant relation between total lending of commercial banks and the amount of the Non-Performing Assets?

Null Hypothesis, $H_0: p=0$, i.e. there is not any significant relation between total lending of commercial banks and the amount of the Non-Performing Assets.

Alternative hypothesis, $H_1: p \neq 0$, i.e. there is significant relation between total lending of commercial bank and the amount of the Non-Performing Assets.

a) T-Test for Nabil Bank Limited

1. Test of Hypothesis

Here,

\bar{X} = Mean of NPA of Bank

\bar{Y} = Mean of total Lending of Bank

Here using the notification often use in testing the hypothesis

$$\bar{X} = 1.78$$

$$\bar{Y} = 179.77$$

$$S = \sqrt{\frac{\sum(X-\bar{X})^2 + \sum(Y-\bar{Y})^2}{n_1 + n_2 - 2}}$$

$$= \sqrt{\frac{0.3586 + 19,055.15}{5 + 5 - 2}}$$

$$= \sqrt{\frac{19,055.508}{8}}$$

$$\therefore S = 48.805$$

Then,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$= \frac{168 - 112.52}{\sqrt{(48.80)^2 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$= -5.76$$

$$\therefore |t| = 5.77$$

Degree of freedom, d.f = n-1 = 5-1 = 4

Now, the tabulated values of 't' at 5% level of significance and 4 degree of freedom, for two tailed test is 2.776

Decision,

Since the calculated value of 't' i.e. |t| is more than tabulated value [5.77 > 2.776], the relationship is significant and H₁ is accepted. There is significant relationship between the amount of Non-Performing Assets of sample Bank and its total lending.

2. Is there any significant relation between the amount of non-performing assets of sample banks and the population?

Null hypothesis, H₀: p=0, i.e. there is significant relation between the amount of non-performing assets of sample banks and the population.

Alternative hypothesis, H₁: p≠0, i.e. there is not any significant relation between the amount of non-performing assets of sample banks and the population.

Here,

\bar{X} = Mean NPA of Sample Bank

\bar{Y} = Mean NPA of Population Banks

Here,

Here using the notation often use in testing the hypothesis

$$\bar{X} = 1.78$$

$$\bar{Y} = 219.76$$

$$S = \sqrt{\frac{\sum(X - \bar{X})^2 + \sum(Y - \bar{Y})^2}{n_1 + n_2 - 2}}$$

$$= \sqrt{\frac{0.3586 + 13.478.87}{5+5-2}}$$

$$\therefore S = 41.047$$

Then,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$= \frac{1.78 - 219.76}{\sqrt{(41.047)^2 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$t = -8396$$

$$\therefore |t| = 8.396$$

Degree of freedom $n-1 = 4$

Now, tabulated value of 't' at 5% level of significant and 4 degree of freedom for the tail test is 2.776.

Decision,

Since, the calculated value of 't' i.e. $|t|$ is more than tabulated value $[8.396 > 2.776]$, the relationship is significant and H_1 is accepted. There is significant relationship between the amount of Non-Performing Assets of sample Bank and its Population NPA.

b) T-Test for Standard Chartered Bank:

1. Here using the notation often use in testing the hypothesis:

Where,

\bar{X} = Mean of NPA of Bank

\bar{Y} = Mean of Total Landing of Bank

Using notification

$$S = \sqrt{\frac{\sum(X-\bar{X})^2 + \sum(Y-\bar{Y})^2}{n_1 + n_2 - 2}}$$

$$= \sqrt{\frac{1.287 + 2668.06}{8}}$$

$$\therefore S = 18.27$$

Then,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$= \frac{1.68 - 112.52}{\sqrt{(18.27)^2 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$= -9.583$$

$$\therefore |t| = 9.58$$

Degree of Freedom $n-1 = 5-1 = 4$

Now tabulated Value of 't' at 5 % Level of Significant and 4 degree of freedom for two tail test is 2.776.

Decision,

Since, the calculated value of 't' i.e. $|t|$ is more than tabulated value $[9.58 > 2.776]$, the relationship is significant and H_1 is accepted. There is significant relationship between the amount of Non-Performing Assets of sample Bank and its Total lending.

2. Is there any significant relation between the amount of non-performing assets of sample banks and the population?

Null hypothesis, H_0 : $p=0$, i.e. there is significant relation between the amount of non-performing assets of sample banks and the population.

Alternative hypothesis, H_1 : $p \neq 0$, i.e. there is not any significant relation between the amount of non-performing assets of sample banks and the population.

\bar{X} = Mean NPA of Sample Bank

\bar{Y} = Total Population NPA of Banks.

When,

$$\bar{X} = 1.68 \quad \bar{Y} = 219.76$$

Using notification

$$S = \sqrt{\frac{\sum(X-\bar{X})^2 + \sum(Y-\bar{Y})^2}{n_1 + n_2 - 2}}$$

$$S = \sqrt{\frac{1.287 + 13,478.87}{5 + 5 - 2}}$$

$$\therefore S = 41.05$$

Than,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$
$$= \frac{1.68 - 219.76}{\sqrt{(41.05)^2 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$= -8.40$$

$$\therefore |t| = 8.40$$

Degree of Freedom $n-1 = 4$

Now the tabulated values of 't' at 5% level of significance and 4 degree of freedom, for two tailed test is 2.776.

Decision:

Since, the calculated value of 't' i.e. $|t|$ is more than tabulated value $[8.40 > 2.776]$, the relationship is significant and H_1 is accepted. There is significant relationship between the amount of Non-Performing Assets of sample Bank and is Population NPA.

c) Himalayan Bank

Test of Hypo Thesis

T-test

1. Is there any Significant relationship between total Landing of Bank and NPA of Bank.

\bar{X} = Mean NPA of Sample bank

\bar{Y} = Mean Total Landing of Bank

Here, using the notification for testing hypothesis

$$\bar{X} = 7.42$$

$$\bar{Y} = 185.42$$

We, Have,

$$S = \sqrt{\frac{\sum(X-\bar{X})^2 + \sum(Y-\bar{Y})^2}{n_1 + n_2 - 2}}$$

$$= \sqrt{\frac{27.32 + 8558.34}{5+5-2}}$$

$$\therefore S = 33.12$$

Then,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$t = \frac{7.42 - 185.42}{\sqrt{(33.12)^2 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$= -8.496$$

$$\therefore |t| = 8.50$$

$$\text{Degree of Freedom } (n-1) = 5-1 = 4$$

Now tabulated Value of 't' at 5 % Level of Significant and 4 degree of freedom for two tail test is 2.776

Decision,

Since the calculated value of 't' i.e. /t/ is more than tabulated value [8.50>2.776} the relationship is significant and H₁ is accepted. There is significant relationship between the amount of Non-Performing Assets of sample Bank and its Total lending.

2. Is there is any significant relation between. NPA of sample bank and population of NPA of Nepalese Commercial Banks.

Null hypothesis, H₀: p=0, i.e. there is significant relation between the amount of non-performing assets of sample banks and the population.

Alternative hypothesis, H₁: P# 0, i.e. there is not any significant relation between the amount of non-performing assets of sample banks and the population.

Here,

\bar{X} = Mean NPA of Bank

\bar{Y} = Mean Population NPA of Bank

\bar{X} = 7.42

\bar{Y} = 219.76

By using notification for testing the hypothesis

$$S = \sqrt{\frac{\sum(X-\bar{X})^2 + \sum(Y-\bar{Y})^2}{n_1 + n_2 - 2}}$$

$$= \sqrt{\frac{27.32 + 13,478.87}{5 + 5 - 2}}$$

∴ S = 41.088

Then,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$t = \frac{7.42 - 219.76}{\sqrt{(41.088)^2 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

t = -8.17

∴ /t/ = 8.17

Degree of Freedom = $n-1 = 4$

Now tabulated Value of 't' at 5 % Level of Significant and 4 degree of freedom for two tail test is 2.776

Decision:

Since the calculated value of 't' i.e. $|t|$ is more than tabulated value $[8.17 > 2.776]$ the relationship is significant and H_1 is accepted. There is significant relationship between the amount of Non-Performing Assets of sample Bank and its Population NPA.

d) Nepal Investment Bank

1. Test of Hypothesis

Here,

\bar{X} = Mean of NPA of Bank

\bar{Y} = Mean of Total Lending of Bank

Here using the notification after are in testing the hypothesis

$$\bar{X} = 2.998, \bar{Y} = 211.52$$

$$\text{Now, } S = \sqrt{\frac{\sum(X-\bar{X})^2 + \sum(Y-\bar{Y})^2}{n_1 + n_2 - 2}}$$

$$S = \sqrt{\frac{2.3524 + 47584.15}{8}}$$

$$= \sqrt{5948.31}$$

$$\therefore S = 77.125$$

Than,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$t = \frac{2.998 - 211.52}{\sqrt{(77.125)^2 \left(\frac{1}{5} + \frac{1}{5}\right)}}$$

$$= \frac{-208.52}{\sqrt{2379.30}} = \frac{-208.52}{48.78}$$

$$= -4.274$$

$$\therefore |t| = 4.274$$

Degree of freedom determinant = $n-1 = 5-1 = 4$

Now, the tabulated value of 't' at 5% level of significant and 4 degree of freedom for two tail test is 2.776

Decision ,

Since the calculated value of 't' i.e. $|t|$ is more than tabulated value $[4.274 > 2.776]$, the relationship is significant and H_1 is accepted. There is significant relationship between the amount of Non-Performing Assets of sample Bank and its total lending.

2. Is there any significant relationship between the amount of NPA of bank and the population NPA of commercial banks?

Null hypothesis $H_0 = P = 0$ there is not any significant relation between the amount of NPA and population NPS

Alternative hypothesis $H_1 : P \neq 0$ i.e. any significant relation between sample NPA and population NPA of Bank

\bar{X} = Mean NPA of Bank

\bar{Y} = mean NPA of total population of commercial banks.

Here,

Using notification of the use in testing the hypothesis

$$\bar{X} = 2.398$$

$$\bar{Y} = 219.76$$

$$S = \sqrt{\frac{\Sigma(x-\bar{x})^2 + 2(y-\bar{y})^2}{n_1 + n_2 - 2}}$$

$$\sqrt{\frac{2.3524+13478.87}{5+5-2}}$$

$$\therefore S = 41.05$$

Then

$$t = \frac{\bar{X} - \bar{Y}}{S \sqrt{\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$= \frac{2.998 - 219.76}{(41.05) \sqrt{\left(\frac{1}{5} + \frac{1}{5}\right)}}$$

$$= \frac{-216.76}{\sqrt{674.04}} = -\frac{216.76}{25.96}$$

$$= -8.3497$$

$$\therefore |t| = 8.34$$

$$\text{Degree of freedom (df)} = n-1 = 5-1 = 4$$

Now the tabulation value of 't' at 5% level of significant level 4 degree of freedom for two tail test is 2.776

Decision,

Since, the calculated value of 't' i.e. |t| is more than tabulated value [8.34 > 2.776] the relationship is significant and H_1 is accepted. There is significant relationship between the amount of Non-Performing Assets of sample Bank and its Population NPA.

e) Bank of Kathmandu

1. Is there any significant relationship between total landing of bank and the amount of NPA

Null hypothesis H_0 $P=0$, there is not any significant relationship between total landing and amount of NPA alternative hypothesis H_1 $P \neq 0$. there is significant relationship between total landing and the amount of NPA

Here,

\bar{x} = mean NPA of bank

\bar{y} = mean total landing of bank

Using the notification often use in testing hypothesis

$$\bar{x} = 2.384$$

$$\bar{y} = 102.12$$

$$S = \frac{\sum(x-\bar{x})^2 + \sum(y-\bar{y})^2}{n_1 + n_2 - 2}$$

$$= \sqrt{\frac{0.7742 + 5276.60}{5 \times 5 - 2}} = \sqrt{659.67}$$

$$\therefore S = 25.68$$

Than,

$$t = \frac{\bar{x} - \bar{y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$= \frac{2.384 - 102.12}{(25.68)^2 \left(\frac{1}{5} + \frac{1}{5} \right)}$$

$$= \frac{-99.74}{\sqrt{263.78}} = \frac{-99.74}{16.24}$$

$$= -6.1416$$

$$\therefore |t| = 6.1416$$

$$\text{degree of freedom } df = n - 1 = 5 - 1 = 4$$

Now, the tabulated value of 't' at 5% level of significant and 4 degree of freedom for two total test in 2.776

Decision :

since the calculated value of 't' is more than tabulated value (6.14167 > 2.776) so, the relationship is significant and H₁ is accepted. There is significant relationship in significant relationship between the amount of NPA of sample bank and it's total landing.

2. is there is any significant relationship between the amount of NPA of the sample bank and population NPA of commercial banks.

Null hypothesis H₀ : p = 0, there is not any significant relationship between NPA and population NPA alternative hypothesis H₁ : P ≠ 0, then is significant relation between NPA and population NPA

\bar{x} = mean NPA of Bank

\bar{y} = mean population NPA of Bank

Using notification

$$\bar{x} = 2.384$$

$$\bar{y} = 219.76$$

$$S = \sqrt{\frac{\sum(x-\bar{x})^2 + \sum(y-\bar{y})^2}{n_1 + n_2 - 2}}$$

$$\therefore S = \sqrt{\frac{0.7742 + 13478.87}{5 + 5 - 2}} = 41.048$$

Than,

$$t = \frac{\bar{x} - \bar{y}}{\sqrt{s^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$
$$= \frac{2.384 - 219.76}{\sqrt{(41.05)^2 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$= -8.3734$$

$$\therefore |t| = 8.3734$$

$$\text{Degree of freedom} = n-1 = 5-1 = 4$$

Now, the tabulated value of $|t|$ at $\alpha\%$ level of significant and 4 degree of freedom for two tail test is 2.776

Decision,

Since, the calculated value of $|t|$ i.e. $|t|$ is more than tabulated value $\{8.34 > 2.776\}$ the relationship is significant and H_1 is accepted. There is significant relationship between the amount of Non-Performing Assets of sample Bank and its Population NPA.

f) **Nepal Bangladesh Bank LTD**

1. Is there any significant relation between total landing of Commercial bank and Amount of NPA.

\bar{X} = Mean NPA of Bank

\bar{Y} = Mean Lending of Bank

Here,

Using the notification often use in testing hypothesis.

$$\bar{X} = 27.43$$

$$\bar{Y} = 94.19$$

$$S = \sqrt{\frac{\sum(X-\bar{X})^2 + \sum(Y-\bar{Y})^2}{n_1 + n_2 - 2}}$$

$$S = \sqrt{\frac{1.69.45 + 26.85}{5+5-2}}$$

$$\therefore S = 4.94$$

Then,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$t = \frac{27.43 - 94.19}{\sqrt{(4.94)^2 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$= -21.37$$

$$\therefore |t| = 21.37$$

$$\text{Degree of Freedom } (n-1) = 5-1 = 4$$

Now, Tabulated Value of 't' at 5 % level of significant and 4 degree of freedom for two tail tst is 2.776.

Decision,

Since, the calculated value of 't' is more than tabulated value ($6.14167 > 2.776$) so, the relationship is significant and H_1 is accepted. There is significant relationship in significant relationship between the amount of NPA of sample bank and it's total landing

2. Is there any significant relation between the amount of non-performing assets of sample banks and the population?

Null hypothesis, H_0 : $p=0$, i.e. there is significant relation between the amount of non-performing assets of sample banks and the population.

Alternative hypothesis, H_1 : $P \neq 0$ i.e. there is not any significant relation between the amount of non-performing assets of sample banks and the population.

\bar{X} = Mean NPA of Bank

\bar{Y} = Mean NPA of Population Bank

Here,

Using Mortification

$$\bar{X} = 27.43$$

$$\bar{Y} = 219.76$$

$$S = \sqrt{\frac{\sum(X-\bar{X})^2 + \sum(Y-\bar{Y})^2}{n_1 + n_2 - 2}}$$

$$S = \sqrt{\frac{186.45 + 13,478.87}{5 + 5 - 2}}$$

$$\therefore S = 41.33$$

Than,

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

$$t = \frac{27.43 - 219.76}{\sqrt{(41.33)^2 \left(\frac{1}{5} + \frac{1}{5} \right)}}$$

$$= -7.35$$

$\therefore t = 7.35$

Now, Degree of freedom $(n-1) = 4$

Now, tabulated value 't' at 5% level of significant and 4 degree of freedom for two tail test is 2.776.

Decision,

Since, the calculated value of 't' i.e. t is more than tabulated value $[7.35 > 2.776]$ the relationship is significant and H_1 is accepted. There is significant relationship between the amount of Non-Performing Assets of sample Bank and its Population NPA.