CHAPTER I

INTRODUCTION

1.1 General Background

Human being had realized the importance of saving from the ancient time. Ancient people used to save their wealth in different forms of money such as animal money (domestic animals-cow, sheep, ox etc.), commodity money (bows, arrows, animal skin, shells, precious stone, rice, tea etc.) and metallic money (gold, silver etc.) before the invention of paper money. When paper money was invented it was very easy to save the income for the people. The amounts which people save are paid into bank accounts for security and earning is known as deposit.

The term 'deposit' is defined as "The amount that is collected into current account, saving account or fixed account of a bank or a financial institution is called deposit" by 'Banijya Bank Act 2031'. The word 'collection' is described as the action of gathering or bringing together. So 'deposit collection' refers to the act of gathering the saving amount of many people in the account of bank. According to 'Oxford Advanced Learners Dictionary-8th edition' the term 'deposit' is defined as 'a sum of money that is paid into a bank account' and 'collection' as 'an act of bringing things together into one place'.

Human being needs the money for different purposes. Money is needed for daily consumption cost, educational charges, health expenses, communication expenditures, transportation payments, administrative, production, distribution overhead and so no. A nation needs money for its economic development such as infrastructure, new technological advancements and industrialization. The flow of money is needed for overall economic prosperity of the people, community, society, nation and the entire whole global world.

People cannot fully depend upon only saving amounts for necessary expenses. If people wait to accumulate huge amounts of money for the expenses or for the investments then they may lose the opportunity and the precious time. So they can get rid of this difficulty by the help of banks and financial institutions via borrowing. The sum of money that people borrow from a bank or a financial institution is known as loan.

Kirkpatrick (1983), defines the terminology finance company as ' a company specializing in lending money against collateral, especially to finance hire-purchase agreements.' Sinclair (1992), defined loan as ‘a loan is a sum of money that you borrow, for example from a bank, and which you have to pay back, usually in weekly or monthly payments’ and ‘management’ as ‘management is the control and organizing of a business or other organization’. Sinclair (1992), further stated disburse and disbursement as ' to disburse an amount of money means to pay it out, usually from a fund which has been collected for a particular purpose. Disbursement is the paying out of a sum of money, especially from a fund.' Sinclair (1992), described recovery as 'the process of getting back the same amount of money that you have spent or invested in a particular activity.' 'Loanee' is a person who receives a loan or who is loaned from one institution.

Banks or financial institutions are monetary intermediaries. These organizations perform a number of important functions. The monetary transactional function of banks or financial institutions is very sensitive. These institutions accept deposit from the people which is the main source of fund of them. Deposit is accepted in current account or in saving account or in fixed account as the rules and regulation of permission of Nepal Rastra Bank. The amount accumulated by such depositing is invested in different sectors as loan by accepting current or fixed assets as security or collateral for earning profit. Generally the rate of interest on loan is higher than the rate of interest on deposit accounts; hence these financial intermediates earn better profit deducting different expenses such as interest, office, administrative and so no.

1.2 Statement of the Problem

Ignorance of the banking system is the main problem of our society. The people do not have banking habits. They think the low rate of interest on deposit in banks or financial institutions is not profitable for them. They are highly ambitious for earning more interest, so they lend their money in unorganized sector for higher rate of interest. Thus they are facing more risks. So many people are cheated by cunning persons and they lost their principal amounts. Nowadays many people of Nepal are victimized by illegal institutional monetary activities such as networking business and so on.

People are also being cheated by the unorganized sector in lending. People are paying more than 36 percent annual interest rate on loans. They do not get any repayment facility for paying back the loans. They may need to suddenly pay the entire amount of loan.

The main problem behind this study is to find out the deposit collection and loan management system of the Narayani National Finance Limited. This study tries to find out the efficiency of performance of the financial sector. Whether the financial institutions of Nepal are in sustainable growth or not is the gist of the problem of this dissertation. Some other issues of statement of the problem are as follows.

(i) What are the procedures for deposit collection and lending?

(ii) What are the factors affecting lending money from unorganized sector?

(iii) What are the consequences of lending from unorganized sector in Nepalese economy?

(iv) What are the tools for evaluating liquidity strength, utilization of deposit and performance efficiency of NNFL?

(v) What is the pattern of deposit collection & loan disbursement in NNFL?

(vi) What are the regression models of loan disbursement on deposit collection, net profit on deposit collection and net profit on loan disbursement?

1.3 Objectives of the Study

The main objective of this study is to examine deposit collection and loan management in Narayani National Finance Limited. The general objective is to inform the benefits of good banking habits for deposit and borrowing. The other specific objectives are as follows:

(i) To explain the deposit collection and lending procedures.

(ii) To display the factors affecting lending money from unorganized sector.

(iii) To discover the consequences of lending from unorganized sector in Nepalese economy.

(iv) To compute the credit deposit ratio, net profit to total deposit ratio and return on investment ratio for measuring the liquidity strength, utilization of deposit and performance efficiency of NNFL.

(v) To measure the correlation between deposit collection and loan disbursement, deposit collection and net profit and loan and net profit.

(vi) To forecast the regression equations of loan disbursement on deposit collection, net profit on deposit collection and net profit on loan disbursement?

1.4 Research Hypotheses

The following two hypotheses are analyzed during the research study.

1. There is significant positive correlation between deposit collection and loan disbursement, net profit and deposit and net profit and loan.
2. The regression lines of loan disbursement on deposit collection, net profit on deposit and net profit on loan are significant.

1.5 Importance of the Study

Financial sector is the main element of the whole economic system of a country. If this sector is mismanaged then the economic development will be impossible. This study is fruitful for depositors, loanees, bankers and the financial institutions. The depositors may practice the good banking habits by knowing the safe and reliable financial institutions. The loanees may get

cheaper rate of interest on loans and installments repayment facilities by repayment schedule.

1.6 Limitations of the Study

The population of the study is the entire banking and financial sector of Nepal, but only a case study of one finance company is performed because of time and resource constraints. So this study may have the following limitations.

1. It may not represent the whole economy of the country because it is a sample study of only one institution out of almost 300 institutions working in the whole economy.

2. The study is based on the secondary data provided by Narayani National Finance Limited hence the limitation of the data may be inherent on this study.

3. Even though the data of more than 10 years are needed for best correlation (trend) analysis, the study is based on the available data of only seven financial years provided by Annual Reports of Narayani National Financial Limited.

4. The study may also be referenced from the websites of Nepal Rastra Bank (Central Bank of Nepal) and others, so the limitations of such websites may also be inborn in this study.

1.7 Organization of the Study

The study is organized in the following five chapters for the fulfillment of the above mentioned objectives.

Chapter I (Introduction)

This part of the study explains the major issue of the study consisting general background, statement of the problem, objectives of the study, research hypotheses, importance of the study, limitations of the study and organization of the study.

Chapter II (Review of literature)

Review of books (bank, development of banking, importance and types of deposit, loan portfolio and credit audit), review of theses, review of NNFL documents and research gap are discussed in this part of the study.

Chapter III (Research Methodology)

This part is about the methodology implemented in carrying out the present study. It deals about research design, the population and sample, nature and source of data, the variables, financial or accounting tools of analysis (credit deposit ratio, net profit to total deposit ratio and return on investment ratio) and statistical tools for analysis (arithmetic mean, standard deviation, coefficient of variation, coefficient of correlation, probable error of coefficient of correlation, coefficient of determination, regression analysis, regression constant, regression coefficient, standard error of the regression line, test of hypothesis, null hypothesis, alternative hypothesis and ANOVA test procedures).

Chapter IV (Data Presentation and Analysis)

Interpretation and analysis of data are dealt on this part of the study. The major findings of the study via financial or accounting tools of analysis and statistical tools of analysis are also included in this part of the thesis.

Chapter V (Summary, Conclusions and Recommendations)

This is the last chapter of the research study. It deals with summary, conclusions and recommendations of the dissertation.

CHAPTER II

REVIEW OF LITERATURE

This chapter is related with the review of related books, previous theses, and NNFL documents. For the purpose of this study available literatures regarding the deposit collection and loan management in financial institutions have been studied and reviewed. Deposit collection and loan management are very essential and critical functions of a financial institution. The exact thesis on 'Deposit Collection and Loan Management in Narayani National Finance Limited' cannot be found. Some books on banking and economics, various theses on interest rate, deposit, lending, investment practice, loan management, fund mobilization and financial performance analysis, a few documents of NNFL, annual reports, and websites of NNFL, NRB and others are available for assisting this research work.

2.1 Review of Books

The exact book explaining the 'Deposit Collection and Loan Management' cannot be found. The books relating economics such as monetary economics, macroeconomics, banking and insurance are helpful to gather some concept about banking and financial system of the country and to know the history of the banking system.

2.1.1 Bank

Summarizing the introduction of the term 'bank' Thapa and Neupane (2068) wrote, "Bank is a financial institution which deals with money. Banks collect the money from the surplus units (savers) and lend to deficit unit (users). Banks raises the funds by accepting deposits, borrowing funds and issuing equity.

These funds are used by the banks to buy securities and to make loans. Further, it creates credit and supports for the formation of capital and hence it is regarded as manufacturer of money. It provides the wide range of services to the customers and also known as financial department store.

The services banks offer the public are accepting the deposits (mainly fixed, current and savings), providing the loan in the form of cash credit, demand loan, overdrafts, short-term loans, discounting bills of exchange, investment of funds, agency functions, credit creation and general utility functions.

Services developed more recently by the banks are granting consumer loan, financial advising, cash management, offering equipment leasing, making venture capital loans, selling insurance services, selling retirement plans, offering mutual funds and annuities, offering merchant banking services.

Trends affecting banks including service proliferation, rising competition, deregulation, rising funding costs, and increase in interest sensitive mix of funds, a technological revolution, consolidation and geographical expansion, globalization of banking, and increased risk of failure."

Thapa and Neupane (2068) quoted some definitions of bank as follows. "A bank is an organization whose principal operations are concerned with the accumulation of the temporarily idle money of the general public for the purpose of advancing to others for expenditure." Kent

"Bank is an institution which collects the money from those who have it to spare and who are saving it out of their income and lends this money out to those who require it." Crowther

"Bank is an organization established for the purpose of exchange money deposit lending money and participation in transactions." Commercial Bank Act 2031(Nepal)

"Any kind of institution offering deposit subject to withdrawal on demand and making loans of a commercial or business nature is a bank." U. S. Law; "Bank is that institution or individual who is always ready to serve money on deposit to be returned against the cheque of their deposits (savers)." Walter Leaf

"Ordinary banking business consists of changing cash for bank deposits and

bank deposits for cash, transferring bank deposits from one person or corporation to another giving bank deposits in exchange for bills of exchange, government bond, the secured or unsecured promise for businessman to repay etc." R. S. Sayers

2.1.2 Development of Banking

Thapa and Neupane (2068) mentioned about the development of banking system in Nepal as "The history of banking in Nepal may be described as a component of gradual and ordinary revolution in the financial and economic sphere in the Nepalese life. Even now the financial system is still in the evolutionary phase. The establishment of "Kausi Toshi Khana" as a banking agency during the time of King Prithvi Narayan Shah and "Tejarath Adda" can be regarded as the initial steps in the direction of start of banking development in Nepal. In the context of Nepal, the development of banks can be summarized in three phases.

Phase I: The establishment of 'Tejarath Adda' during the Tenure of Prime Minister Ranoddip Singh in 1933 B.S. (1876 A.D.) was the first step towards the institutional development of banking in Nepal. It was fully subscribed by the government in Kathmandu. Tejarath provided credit loans to the general public at 5 percent interest rate on securities i.e. gold, silver and other ornaments. Its objective was to provide credit or loans to the general public but it failed to accept deposit from them.

Phase II: During the time of Chandra Shamsher (1901-1929), credit facilities of 'Tejarath' were extended by opening its branches. Later, 'Tejarath' was replaced by the first commercial bank, Nepal Bank Limited established on 30th Kartik 1994 B.S. is the first commercial bank in Nepal with authorized capital of 10 million rupees. Then Nepal Rastra Bank was established on B.S. 2013.01.14 as the central bank under the Nepal Rastra Bank Act 2012 B.S. Its function was to supervise commercial banks and to guide the basic monetary policy of the nation. In 2013 B.S., Industrial Development Center was established and later it was converted into Nepal Industrial Development Corporation (NIDC) in

2016 B.S. As the monetary transaction got more and more complicated on 2022.10.10, Rastriya Banijya Bank (RBB) was established as a fully government owned commercial bank. Agricultural Development Bank (Nepal) (ADB/N) was established on 2024.10.07 to help the agricultural side of the country.

Phase III: To operate all commercial banks uniformly under single act, "Commercial Bank Act 2031" was enacted. According to the Nepal Commercial Bank Act of 2031 B.S. (1974 A.D.); "Commercial banks are banks that deal with money exchange, accepting deposits, advancing loans and other commercial transactions except some special functions done by specified cooperative, agriculture and industrial banks". In 2041 B.S., Nepal government established five rural development banks under the control and supervision of Nepal Rastra Bank(NRB). The establishment of these banks helped in spreading the banking services to both urban and rural areas but banking services to the customer satisfaction was still far.

After the reestablishment of democracy, the government has taken liberal policy in banking sector so different private banks are getting permission to establish with the joint venture of other countries. Nabil is the first joint venture bank as Nepal Arab Bank. Similarly, two foreign commercial banks Nepal Indosuez Bank Limited and Nepal Grindlays Bank Ltd. entered in Nepal in the form of joint venture and the trend is continuing till today as many Nepalese owned banks are also running. Today, there are all together 25 commercial banks in Nepal."

2.1.3 Importance and Types of Deposit

Emphasizing the importance of deposit, Thapa and Neupane(2068) further stated that " Deposits are the vital input in banking and principal source of capital to fund bank loans and security purchases and help generate profits to support long term growth. The collection of the deposit with lowest possible cost is the important indicator of the management effectiveness. If the sufficient deposits are collected then the bank can loans to the customers.

Banks offers the different types of deposits. Transaction accounts include all deposits against which the account holder permitted to make withdrawals by negotiable or transferable instruments, payment order of withdrawal, or telephone or preauthorized transfers for the purpose of making payments to third persons or others. Transaction deposits include regular noninterest bearing demand deposits and interest bearing demand deposits.

Noninterest bearing demand deposit do not earn an explicit interest payment but provide the customer with payment with payment services, safekeeping of funds, and recordkeeping for any transactions carried out by check. However, demand deposits are among the most volatile and least predictable of a bank's sources of funds, with the shortest potential maturity, because they can be withdrawn without prior notice.

Interest bearing demand deposits provides all of the foregoing services and pay interest to the depositor. Interest bearing demand deposits is the checking savings deposits appear in the form of negotiable order of withdrawal (NOW) accounts. Nontransaction deposits are the accounts whose primary purpose is to encourage bank customers to save rather to make payments.

A different type of deposits carries a different interest rate. The longer the maturity of a deposit, the greater the yield that must be offered to depositors, because of the time value of money. The size and risk exposure of the offering banks also pay an important role in determining the interest rates. The availability of a large block of core deposits increases the duration of a bank's liabilities and makes the institution less vulnerable to swings in interest rates. However, the combination of inflation, deregulation, stiff competition, and better educated customers has resulted in a dramatic shift in the mix of deposits banks are able to sell.

Bank manager uses the various deposit pricing models to pricing the various deposits. They are cost-plus deposit pricing, pooled funds approach, marginal cost pricing, market penetration deposit pricing, price schedules to segment deposit, upscale target pricing, relationship pricing, and bank goal deposit pricing. Basic banking is the offering of low cost deposit or loan services to

low income customers. Non-deposit investment products include the mutual funds and annuity. Mutual fund is the most popular of the non-deposit investment products sold by banks is in mutual funds. The mutual funds are the companies that offer shares in a pool of securities (stocks, bonds, etc.) and flow through any earnings generated to the shareholding customer. Each share in a mutual fund permits an investor to receive a pro rata share of any dividends, interest payments, or other forms of income generated by a pool of stocks, bonds, or other securities that the funds. Annuity is a saving instrument in which the customer makes cash payments to an investment manager who places them into earning assets and later on the purchaser receives a stream of income from those assets."

Highlighting the significance of Loan, Thapa and Neupane (2068) again noted down that "Bank provides the loans to its customers. Making loan is the principal economic function on bank to fund consumption and investment spending by businesses, individuals, and government. Bank loans often seem to convey positive information to the marketplace about a borrower's credit quality, enabling a borrower to obtain more and cheaper funds from other sources. The majority of the banks, loans represent fifty percent or more of their total assets and about half to two thirds of their revenues.

Banks make a wide variety of loans to a wide variety of customers for many different purposes. The bank loans includes real estate loans financial institution loans, agricultural production loans, commercial and industrial loans, loans to individuals, miscellaneous loans and lease financing receivables. Factors affecting bank growth and bank loans include features of the market area, participations, bank size, loan policy and expected yield.

2.1.4 Loan Portfolio

A bank's loan portfolio is heavily influenced by regulation because the quality of a bank's loan portfolio reflects the risk and safety. Therefore the bank's loan portfolio is regulated by the regulator. Regulators assigned a numerical rating best on the quality of its asset portfolio, including its loan. The quality of loans

and other bank assets is only one dimension of a bank's performance that is rated under the uniform financial institutions rating system, which now encompasses six general categories of performance under the label CAMELS.

Each bank should have a written policies and procedures for processing each loan request. Each bank should have a written loan policy that describes what types of loans and loan terms best protect the bank's soundness and also help to meet the needs of the communities the bank serves. The loan policy statement indicates the lines of authority and decision making within the loan department and the documentation that must accompany each loan application. Other features in a typical written bank loan policy include guidelines on taking, evaluating, and perfecting loan collateral, procedures for setting interest rates and description of those types of loans and bank prefers not to make.

Banks consider many factors in deciding whether or not to grant a loan to a borrower. Generally, however, the evaluation of loan application will focus on six key factors:(1) Character, which goes to the honesty and sincerity of the borrower and whether the loan is for a good purpose;(2) Capacity, or whether the borrower has the legal standing necessary to sign a valid loan contract; (3) Cash, which focuses on the borrower's estimated capacity to generate sufficient income or cash flow to repay the loan;(4) Collateral, or whether the borrower has assets or other items of value that can be pledged to help secure the loan; (5) Conditions, or the broader environment of the industry and the economy in which the borrower operates that could adversely affect loan repayment ; and (6) Control, which refers to whether or not the borrower's application meets the bank's loan quality standards and the standards imposed by the regulatory authorities.

These aspects of each loan application help bank officers and credit analysts deal with the three major questions that must be answered before any loan is approved. (1) Is the borrower creditworthy? (2) Can the loan agreement be properly structured to protect the bank and its depositors? And (3) Can the bank perfect its claim against the borrower's assets or earning in the event of default? For most banks this involves a careful review of the borrower's

payment record, the supporting documentation, and the loan's conformity to the bank's quality standards and government regulations.

A sound bank lending program must make provision for the periodic review of all loans until they are retired. When this loan review process turns up problems loans, they are generally turned over to a loan workout specialist, who must investigate the causes the problem and work with the borrower to find the solution. "

2.1.5 Credit Audit

Credit audit is an important aspect of loan management. Emphasizing the importance of credit audit Bhandari(2056), wrote " Audit is very important to check the institution's transactions. All transactions audit and credit audit are two different aspects of audit. The credit audit is included in all transactions audit of the institution but credit audit does not include the whole transactions audit. Credit audit is considered as an important aspect of audit of an institution. Credit audit establishes a continuous and smooth relation between the client and the institution. The main aims of the credit audit are, due time recovery of principal and interest for the institution and purpose wise proper use of the loan for the client. If credit audit is done regularly then no any bad intentions can be generate in the mind of the client. In other words the client will be always positive in repaying back the loan or installments. Thus credit audit is beneficial for both the client and institution. Credit auditor should examine the reality properly which reflects the actual position of the client. Credit audit can be explained by the verification of loan documents and field visit.

The credit auditor verifies the loan documents. The institution creates a file for the client when loan is disbursed. The file contains all necessary details of the client such as date of loan disbursement, amount of disbursement, the loan repayment schedule, the dates and amounts of repaid principal and interests and the correspondence details to the client. Thus by observing the file the auditor can check exactly whether the client was regular or not, obeyed the instructions

or not, properly used the loan amount in due purpose or not. Thus the reality can be realized by observing the file and the auditor can prepare credit audit report by the thorough examination of necessary documents properly.

Field visit can be advantageous for credit auditor. If the auditor is not satisfied by the observation of the credit file, the field or the spot of industry or business can be visited by the auditor for checking whether the provided information on the file are exact or not. When field visit is done it creates moral pressure to the client for repaying the installment in due time. It also strengthened the relationship between the client and the institution. Thus by field visit, the auditor can solve the suspects about the loanee and can create a nice credit audit report easily.

The credit audit conducted by the institution which disburses the loan is known as internal credit audit. The institution can verify the loan documents and visit the field for finding out the reality. The institution can get enquiry about unknown and unclear matters and can order for necessary documents from the client. An institution can have more branches and loan is disbursed by all branches. The credit audit conducted by the main branch (head office) of the branches is known as external credit audit.

Central bank is the bank of all banks of a country. All banks and financial institutions are established by the permission and approval of the central bank. The credit audit conducted by the central bank (that is NRB in the context of Nepal) of all banks and financial institutions for checking whether loans are disbursed as its rules, regulations and instructions or not, is known as credit audit by central bank and such audit is very effective indeed."

2.2 Review of Theses

Even though the exact theses of 'Deposit Collection and Loan Management' are not available but some related theses and research works help for this dissertation to get clear ideas about the banking system, deposit collection and loan management.

Analyzing the impact of micro credit project for women (MCPW) in Nepal

Maske(2004), stated that" The majority of women in Nepal are illiterate and engaged in agriculture, and agricultural activities for their livelihood. The status of women is very low to that of male. So the improvement of the woman status is the vital issue.

Women are important sources of energy for the development and their groups can be an effective channel for funds aimed at meeting the needs of the poorest people in rural areas of third world. Their potential can be realized if they integrated into the whole spectrum of development programs, rather than relegated to the marginal sector currently reserved for women.

In recent years there has been a growing realization in many nations regarding the importance of women's participation in the development process and the need for their advancement. As a consequence, numerous national as well as international organizations have been established which carry out program varied in nature and targeted at enabling women to become aware of their situation and potential to gain relative economic independence, together with a better position in their household as well as society. Provision of credit is aptly regarded as one of the potentially strongest forces to propel action towards achieving this goal. Micro finance (Micro – credit), since its evolution, has been proved as an effective tool to strengthen various programs to poverty alleviation and itself as a way to attack poverty.

Realizing this fact in Nepal, HMG/N conducted MCPW in twelve districts and five urban areas. The purpose of six years (1994 – 2000 A.D.) joint project between HMG/N and ADB was to improve the socio-economic status of women in Nepal by promoting their participation and integration in national development. More specifically, the project was aimed at increasing income and to provide employment opportunity to poor women in selected urban and rural areas.

WDS(Women Development Society) of Chitwan started MCPW in Mangalpur VDC since 1994 under which micro credit is provided for production activities for poor women. There is no physical collateral and loan is provided on group liability basis. Since 1994 there were altogether 66 groups, which consisted 406

group members engaged in income generating activities.

Under MCPW in Mangalpur VDC, WDS recommended and Nepal Bank Ltd. Rampur branch provided loans. MCPW has served women from a wide varieties of ethnic groups including Brahmin, Chettri, Newar, Kumal, Tharu, and others. Some of the findings of the study are summarized as follows.

1. Most of the women came to know about MCPW from women development office.
2. Samuha was the motivating factor for joining MCPW.
3. Forming a group was a difficult task for women.
4. The role of the bank was not satisfactory as judged by groups.
5. Interest rate was found to be appropriate.
6. 60% of the women took the loan did not pay back the loan.
7. Monthly income increased after MCPW."

The significance and the historical background of financial system of Nepal in the words of Regmi (2006), "The development of any country largely depends up on its economic development. The financial institution play domination role in the process of economic development. The beginning and establishment of financial institutions depends up on the level of the level of economic activities and monetary transaction in the country. In Nepalese context, the history of modern financial institution begins with the establishment of Nepal Bank Limited in 1937 A.D. since then, several financial institutions i.e. joint venture banks, domestic commercial banks and finance companies have come in to existence, which carter the financial need of the country.

Though the finance company act was passed in 1985, it became operational only in 1992, after the implementation of liberal economic policy. Within the short period this sector has assumed growing importance in a situation when commercial banks are not able to meet individual credit needs. It is timely that finance companies have grown to replace and has brought legal institution within the regulation and control of Nepal Rastra Bank. The trend of the companies is at a tremendous speed. During the period of 1992 to 1999, there

has been mushroom growth of finance companies and the official figure shows above registration of 69 finance companies.

Finance companies are the financial institutions which stimulate saving by mobilizing idle resources in one hand and on the other, lend the resources so mobilized to those who have investment opportunities. Thus, they have served as one institution of development of enhancing and promoting industrial and agricultural activities in the country. Though, sufficient return cannot have been achieved by the finance companies. They have not been able to utilize their funds most efficiently and productively. Whatever may be outcome, the deposit mobilization capacity of finance companies is going favourable and the lending capabilities has also gone up to a considerable extent."

Analyzing the impact of financial institution, Regmi(2006), further added, "For the economic development of the nation, finance companies systematically collects the scattered capitals in different institutions, companies or persons, as the financial intermediaries for depositing or giving credit, it does not regard as the positive impact. The positive impacts for the economy for economic development of the nation that is caused by the financial companies are as follows.

1. They argue with a sense a confidence that the growth of finance companies has made it possible for client to have easy access to fulfill individual credit needs which continue to be difficult in commercial banks as a result of too many unwanted and complicated procedures.
2. The depositors have new alternatives to choose a finance where they can put their funds with alternatives return and incentives and favorable terms and conditions, which they don't enjoy earlier. The only thing is that finance companies are gaining experience and have to restore full confidence of depositors.
3. Finance companies are competing for funds in the markets. This is a healthy thing since only those finance companies that can manage and utilize funds who tap them and inefficient ones will be automatically driven out from the market.

4. Finance companies tend to balance their funding portfolio by linking deposit with investment and lending function together, so as to encourage growth of capital market on one hand and meeting consumer demand for credit and industrial growth in the other hand.
5. Finance companies have come up with the idea to encourage consumer to strengthen their purchasing power though the channel of consumer credit as a hedge against inflation to build their consumer assets portfolio today by paying from future income. Even on hire purchase for instance, it is not fully exhausted as many consumer durable can be bought under list of consumer assets building portfolio such as engineering equipment, medicine appliances and kitchen tools.
6. Finance companies are in a better position to match repayment schedules by linking the cash inflows to credit outflows by minimizing credit defaults through strong internal management and strict credit monitoring in addition to timely credit supervision and control by NRB. Finance companies are trying to develop appraisal expertise within the organization itself."

Focusing on the loan recovery problem Joshi(2007), stated that" The fundamental purpose of conducting this research was to improve recovery techniques; to find the causes for increasing non-performing loans in the financial institutions; to find the demanded facilities in the existing system by the financial institutions to decrease the non-performing loans; to recognize the sector, in which high inactive loans exists in most of the financial institutions and propose for effective steps to reduce the inactive loans. During this survey, questionnaire was developed through discussions and primary data was collected via students of the college to get information regarding different aspects as mentioned above.

From the last 5/6 years declining management & economy of Nepal due to countries political instability, maoist revolution, lack of peace & security, announcement of emergency in the country, etc. has greatly affected every sector of economy as well as countries financial institutions. Due to this uncontrollable situation of the country, the recovery in the loan has decline

resulting in increasing non-performing loans of financial institutions.

The major findings are that mismatch of loan purpose and financial mismanagement is the major reason for increasing non-performing loan. According to the respondent, the major reason for increasing Non-banking Assets (NBA) is overvaluation of collateral and land & building at unsuitable area, i.e. not easily saleable. Business sector is found to be the top investing sector both no. of client wise and amount wise. Being the highest investment sector, business sector has been analyzed as the defaulting sector as well. Normally, 1 to 2 staff is allotted for direct recovery process and trend of regular recovery is found in all the financial institution with emphasizing more quarterly and at the year end.

The effective techniques to improve recovery process and reduce the inactive loans are regular contacts with client, frequent supervision, and flexible repayment method (restructure/reschedule).

The better technique to reduce NBA is by forcing the loanee to accept back the collateral so that loanee as well as the institution will be in benefit.

The appropriate tools for recovery are to do the personal contact with the client and regular contact through telephone to know the existing situation of the client. But letters and publishing in paper should be done for the formalities for legal procedure as evidential documents.

The major difficulty faced in recovery is due to economic downfall of country. This situation has led to closing of the projects & declining source of income of client. Moreover, lingering habit and ignoring attitude of client are also the problems faced during recovery.

The suitable strategies that the company can adopt for better recovery techniques could be good customer selection process keeping the concept of prevention is better than cure. After that, the main strengths of financial institution in the recovery process are regular and active involvement of staffs with the policy of regular inspection or regular contact with loanee for informing about installment as well as getting informed about their situation/problems. At the contrary, the major weakness of institution in the

recovery is found to be the lack of analysis, supervision and inspection of project, client & collateral.

The ultimate option for those bad loans with strong collateral is to accept the collateral as non-banking assets and sell them. For the cases where there is very low or no chance of recovery, write off should be done.

For the economic development of the country, financial institutions will have to improve its efficiency in recovery, strengthen its financial condition and undertake more prudent recovery under the effective regulatory supervision of NRB."

The history of origination of the word 'bank' as quoted by Paudyal(2008)," The term ‘Bank’ is originated from French word ‘Banke’. Some economists are in the opinion that it is derived from Italian word ‘Banco’. ‘Banco’ refers the bench where the goldsmiths of that very time used to deal the monetary transactions.

There is controversy among economists on the origin of the word 'bank'. Some economists said that there was severe economic crisis in Italy in 1171. The Italian government collected fund at 5 percentage interest rate from the public to sustain the economic development and to save the nation from the crisis. The term used to denote the fund collected from the citizens was 'Monte' which means 'Mountain'. It means that the accumulate amount was enormous as a mountain. It was also called 'Joint Stock Fund'. Later on the term 'Monte' changed into 'Banck' in Germany, 'Bano' in Italy, 'Banke' in French and 'Bank' in English.

It is said that the bank and bank notes were used in Babylon in 600 (B.C.). ‘The Bank of Venice’ founded in 1157 A.D. was the first public banking institution of the middle age."

The historical background and the importance of financial system in the words of Baral (2012)," In the ancient time human being used to leave in jungle, they used to eat jungle's vegetable, they have no special inhabitations. They used to pass visiting life from one place to another. That age was called as jungle era. After that era people started to feel something comfort by staying in a special

place by farming, then they started cultivating and they became able to produce foods for their needs. The age was preliminary agricultural era. After that era people tried to find new and new thing day by day then they entered in mass production. They started to find out new plant and equipment for farming and after then they able to create difference machinery for making industrial goods. That era was called as pre industrial age. After that era people able to create automated machine and different types of means of transportation. This is the industrial age. In this age different types of bank and financial institutions are started to provide the loan for developing industrial activities. So by observing the term "loan disbursement and collection" it is started after agricultural age, and it became increasing with the movement of time, and after that age huge amount of loan disbursement in difference sector is started. In each and every country if government feels to develop of any special sector then there needs large amount of disbursement. After loan disbursement, the loan should collect otherwise there would end the existence of disbursement company.

Disbursement inspires the production. After investing in productive sector then there we get return. So the borrower repay loan with interest. After loan disbursement loan collection is compulsory otherwise these will end the existence of disbursement company. "

Emphasizing the role and importance of institutional or organized sector lending Baral (2012) further stated, "Because of lack of banking sector in rural areas, non institutional money lender and non-institutional financing plays significant role in rural areas. Most of farmers have less than one hectare of land and also landless. Because of high interest rate of non-institutional loan, Nepalese farmers and their generation born in debt live in debt, die in debt and bequeath in debt. Nepal government have kept poverty alleviation is the main objective since 8th plan to thereafter plans. Agricultural sector is the chief support to poverty alleviation and to achieve sustainable economic development in rural economy. The purpose of granting agricultural credit is to uplift life standard of the farmers by income generating activities, to create

employment and self-employment and to reduce poverty through social mobilization."

2.3 Review of NNFL Documents

Cash and customer service manual, 2066 of NNFL is analysed for collecting the ideas about different types of deposits and deposit collection procedures. Generally there are three types of deposit account in a bank. These are current account, saving account and fixed account. The bank does not provide any interest in the current account but the account holder may withdraw huge amount from the bank when required. Depositors get some interest in the saving account but there may be limitations to withdraw the amount from the saving account. Normally the bank fixes a ceiling of amount for per day withdrawal from the saving account. If someone has to withdraw more than the fixed upper limit amount from the saving account, he has to inform the bank before some days of the withdrawal day. The number of days for pre-information to the bank may vary among banks as per rules and regulations of the banks. Depositors get more interest rate in fixed account. When someone wants to open a fixed deposit account he has to decide what period of time is suitable for him for opening the account. Usually banks open fixed deposit for 3 months, 6 months, 9 months and 1 to 6 years. But this duration of the fixed deposit account may vary as per the liquidity situation, financial crisis and policies of the banks.

Normally finance companies are not allowed to open current account. So, only saving deposit and fixed deposit accounts are operated in Narayani National Finance Limited. NNFL used to open fixed deposit account for 3 months to 6 years. Nowadays because of high liquidity and the trend of falling interest rate in deposit and loans fixed deposit accounts are opened only for 3 months to 2 years. The rate of interest in fixed deposit account increases as we increase the duration of the account. In other words we get more interest rate in 2 years fixed deposit account than in 1 year fixed deposit account. When people open a fixed deposit account the principal amount, the rate of interest and the duration

of the account are declared fixed. It means that people cannot add any amount to that account until it matures. The rate of interest fixed by contract in the fixed deposit account will not vary whether the market rate of interest will decrease or increase. When the fixed deposit matures the depositor may withdraw it, renew for suitable time or add or subtract the principal amount and renew the new principal amount. The financial institutions and banks suffered from liquidity crunch from 2008 to 2011. At the duration of financial crunch the banks and the financial institutions developed new types of deposit product for business promotion. Narayani National Finance Limited has launched the various saving accounts varieties as shareholder saving account, prashik saving account, bal saving account, nari saving account, jesthanagarik saving account, special recurring account and special institutional deposit account. NNFL has introduced some semi fixed deposit type saving accounts where the depositors can get the facility of higher interest rate almost as fixed deposit account and deposit and withdrawal facilities as saving accounts. These are special fixed deposit individual accounts and special fixed deposit corporate accounts. People have to fill up the account opening form and KYC (know your customer) form for opening the deposit account at NNFL. Details about the client such as name, names of family members, address, map of location of home, contact phone or mobile numbers, citizenship certificate number, source of fund if the deposit amount is Rs. one million or more and so on are filled in the account opening form. People have to provide photocopy of citizenship certificate, lalpurja, card or bill of electricity or khanepani used at home. The citizens of Nepal and India are permitted as Nepal Rastra Bank rules and regulation for opening deposit accounts. Natural persons and artificial persons can open the deposit account. Natural persons may be competent person, minor, lunatic or person of unsound mind and joint account holders. Artificial persons may be private firm, partnership firm, company, institutions registered under special act and other institutions.

Loan disbursement and recovery manual, 2066 of NNFL is studied for gathering the meaning of some credit or loan related terminology and explain the lending procedures.

'Tamsuk' is a legal document printed in Nepali paper (that is traditional strong and rough paper made without new technology). 'Promissory note' is a written promise by the loanee to pay the taken loan amount in due time with mentioned interest rate. 'Drishtibandhak tamasuk' is another important legal document printed in Nepali paper for the security of the institution to register the collateral in the name and ownership of the institution. The drishtibandhak tamasuk is registered in the district malpot karyalaya. 'Malpot karyalaya' is the government office that deals with the purchasing and selling process of the land and it collects the levied land tax from the land owner. 'Char killa' is a certificate prepared and approved by the municipality to declare the surrounding or borders (north, east, west and south) of the collateral. 'Dharauti' is defined as the amount deposited by a client in an institution for future security of the institution. If any losses are incurred by the causes or activities of the client, then the institution will recover the losses by deducting the dharauti amount. 'Lal purja' is a certificate of ownership of the land prepared and approved by malpot karyalaya.

NNFL provides two types of loan, short term and long term. Normally short term loan is disbursed for 1 year and long term loan is paid out for more than 1 year to 15 years. There are different types of loans in NNFL such as deprived sector loan, housing loan, education loan, personal loan, industrial loan, business or trading loan, hire purchase loan, agriculture loan, foreign employment loan, social loan, health loan, tourism loan and other loan. There are some minimum qualifications that are required for getting loan from NNFL. The person should be citizens of Nepal and should possess citizenship certificate. The age limit is above 18 years and should not exceed 70 years but for providing collateral, the age above 70 years does not matter. The provided collateral should be acceptable to the company. The collateral in the name of minor will not be accepted but the collateral bought in the name of minor along

with the name of the caretaker (guardian) will be acceptable. The person should have regular source of income to repay back the installment on time. The person should be trustable and reliable to the company. The person should be able to utilize the loan for the mentioned purpose.

The decision of loan approval will be provided by NNFL within 10 working days after the submission of loan application form along with the necessary documents. There are many important documents for processing the loan application. For business or industrial loan, firm registration certificate, and PAN registration certificate are required. Stock inventory details of the business or industry along with audited reports of final accounts should be presented. Net annual saving with detailed annual income and expenditure and projected net profit are also helpful for getting loan from NNFL. For housing loan, the documents of architectural design map of building approved by the municipality office are required. For hire purchase loan, the quotation of the purchasing vehicle or hire purchasing item and photocopy of lal purja (landlord registration certificate) are necessary. The photocopy of field map, lal purja, property tax paid receipt, char killa and citizenship certificate are also needed. The recent passport sized photo of the person and the photocopy of citizenship certificate of owner of the collateral are also to be provided at NNFL. For institutional loans photocopy of partnership deed, memorandum and article of association and prospectus, minute regarding loan to be taken, the decision of authorized person for loan transactions are of vital importance. The brief introduction of the company or firm and the name of present directors of the company are also essential for applying the loan at NNFL.

The interested person has to fill up a loan application form for the request of sanctioning the loan from NNFL. The loan application form contains loan purpose, demanded loan amount, name of the loanee(if the loan is being taken in the name of firm, the name of the authorized person of the firm), profession, father or spouse's name, grandfather's or father-in-law's name, permanent address, mailing address, contact telephone number, email address, where to spend the loan amount or exact field of the loan, total amount required for the

purpose, amount from client's side, amount demanded for loan, total annual income source and amount, total annual expenses, net saving amount, loan repayment period, collateral detail, firm detail, one recent passport sized photo of the loanee and so on.

Old loanees are given the top priority in NNFL. They could get the loan at cheaper rate and the loan sanctioning process will be fast. If someone provides collateral of land or building for hire purchase loan the interest rate will be low in this case. Short and long term loans are provided as requirements. Short term loan up to 1 year is business working capital loan which is renewed every year. People can get other term loans for up to 15 years paying back in monthly or quarterly or semiannually or yearly installments.

The collateral is valued by the engineering consultancy firm prescribed by NNFL. NNFL can reject the offered collateral or security for the loan in some terms and conditions such as, if there is possibility of flood in rainy season, if the collateral does not touch any road, if it is located at the risky area of landslide, if it is situated under or near the high tension electric current line, if the building is very old or it is made up of unbaked bricks, wood and straws or dried grass (khar), if the collateral is a vehicle and it is more than 10 years old or it is in such a condition that it can't be insured by a reliable insurance company, if the collateral are those securities which are not listed in Nepal Stock Exchange Limited, if the collateral purchased time is within six months and thirty-five days and so on.

If the person is not black listed by financial institution in the report of (CIB) Credit Information Bureau and has good acceptable collateral then only the lending procedure starts at NNFL. Loan demand form should be filled and submitted with corresponding necessary documents. The report of valuator should be submitted. NNFL provides loan up to 50 to 60 percentage of the valuation amount when approved by head office, Kalikasthan, Kathmandu. After the approval of head office, legal documents for loan disbursement are prepared such as tamsuk, drishtibandhak tamsuk, promissory note and registered in concerned malpot karyalaya. The terms and conditions for loan

recovery are addressed in tamasuk and loan issue document. There are many options for paying back the principal and interest for the loanee in NNFL such as monthly, bi-monthly, quarterly, half-yearly, yearly or as per the wish and convenience of the client. Finally the loan account is entered in computer as per loan issue document and loan amount is disbursed in the loan nominee account of the client. The repayment schedule is provided to the client for the remembrance of installment pay back due date. If the installment amount is not paid back in due date then NNFL charges penal interest on principal as well as on interest as per rules. So installment due date is very important for the client. If the disbursed loan is hire purchase loan then a coupon is provided to the client for getting the hire purchased item(for example vehicle, household good). If NNFL provides bank guarantee for a person then it takes collateral or dharauti (bank guarantee margin) amount for the future security.

NNFL can renew the short term loan such as business working capital loan. When the loan is about to expire, the client can apply for the renewal of the loan. Then NNFL analyses the past activities of the client. There should be proper reasons and bases for the renewal of loan. The book keeping system of the client should be as prevailing accounting system and rules such as company act and other acts. The client should have used the loan amount in proper purpose and it should be beneficial to the client. The loanee should be regular in repaying back the installment in due time. There should not be any difficulties for recovering the principal and interest after the renewal of the loan and renewal of the loan should be necessary for the client. If necessary, additional collateral and true financial statement can be demanded for renewal of a loan. Thus analyzing such facts NNFL will decide whether to renew the loan or not. It can propose additional conditions for renewal of the loan to the client. The client has to accept all the additional conditions of the institution for renewal of loan. Finally all necessary documents are prepared and signed then the loan is renewed for desired and required duration.

Cash and customer service manual, 2066 of NNFL describes the services of remittance of NNFL besides deposit collection, loan disbursement and loan

recovery. Remittance is the main source of deposit of every bank and financial institution of Nepal. The youth circle of Nepal is busy in foreign employment. They send their salary amount to Nepal by the help of remittance services. NNFL is providing remittance services, domestic money transfer service and abroad money transfer service. NNFL is providing remittance services of BOK moneygram, IME, Prabhu Money Transfer, Western Union, Himal Remit, Reliable Remit, Prithvi Remit, Samsara Remit, Machhapuchchhre Remit, Laxmi EMT Remit and so on.

2.4 Research Gap

There is not any available thesis of NNFL on deposit collection and loan management. Only two theses were found studied in the data of former Narayani Finance Limited, Narayangarh, Chitwan. One of them is ' *Financial Performance Analysis of Narayani Finance Limited and Annapurna Finance Company Limited.'*. The comparison of the performance of the two finance companies had been analysed in this thesis. The other thesis of Narayani Finance Limited is '*Loan Management in Nepal A Case Study of Narayani Finance Limited.'*. Only the loan management part is analysed in this case study research. The deposit collection and loan management the overall function of NNFL is not studied yet. Nowadays NRB the central bank of Nepal is promoting the process of merging of banks and financial institutions for the efficient performance and sustainable growth of the financial system of Nepal. In accordance with the merging policy of NRB two finance companies Narayani Finance Limited and National Finance Limited were merged to form NNFL. There is not any thesis on NNFL after merging. Therefore to fill up this gap this research study has been done analyzing the various aspects and consequences of deposit collection and loan management of NNFL after merging.

CHAPTER III

RESEARCH METHODOLOGY

"Research methodology refers to the various sequential steps to adopt by a researcher in studying a problem with certain objectives in view."(Kothari, CR) Research methodology is used for achieving the objectives of this dissertation. This study includes the various accounting or financial tools and statistical tools to analyze the data in order to obtain the decisions.

3.1 Research Design

This thesis study attempts to analyze the relationship between the amount of deposit collection, loan disbursement and net profit. Hence a co-relational research design and case study research design is used.

3.2 Population and Sample

The population of this study is composed of all the banking and financial system of Nepal, for examples commercial banks, development banks, finance companies, micro-finance development banks, saving and credit co-operatives, NGOs and other institutions. As the report of NRB on website, by the end of mid - January 2013 there were altogether 266 banks and non-bank financial institutions licensed by NRB in operation. Out of them, 32 are “A” class commercial banks, 90 “B” class development banks, 67 “C” class finance companies, 25 “D” class micro-finance development banks, 16 saving and credit co-operatives, 34 NGOs and 2 other institutions. (Source: website: www.nrb.org.np). The sample is taken out of the huge population is Narayani National Finance Limited.

Narayani National Finance Limited (NNFL) was formed after the merged of two finance companies (Narayani Finance Limited and National Finance

Limited) in 2009 A.D. Narayani Finance Limited was the first financial institution established by private sector in Chitwan district in 2051 B.S. and National Finance Limited was incorporated on the 30th August 1992 with the approval of the Central Bank (Nepal Rastra Bank) in Kathmandu, Pako, Newroad.

The authorized capital of NNFL is Rs.1,00,00,00,000/-, issued capital is Rs.66,00,00,000/- and paid up capital is Rs.64,74,84,500/-. It has accumulated 28.94 crores reserve fund till fiscal year 2068/069. The head office of NNFL is located in Kalikasthan, Kathmandu. It has one main branch at Pako, New road, Kathmadu and a regional branch at Narayangarh, Chitwan. NNFL has eight branches (Tehrathum, Biratnagar, Itahari, Ratnanagar, Bharatpur, Dhalko, Shankhamool and Attarkhel) operating in the eastern and central Nepal providing free ABBS services facilities. (Source: website:www.nnfl.com.np)

3.3 Nature and Source of Data

All data used in this dissertation are gathered from secondary sources. The secondary sources are annual reports, documents and website of Narayani National Finance Limited. This study covers a period of seven financial years from 2062/63 to 2068/69(B.S.). Out of these seven financial years the first four financial years are of Narayani Finance Limited, Narayangarh, Chitwan and National Finance Limited, Pako, Newroad, Kathmandu before merging. The last three financial years are of Narayani National Finance Limited after merging.

3.4 The Variables

The dependent variables of the study are the amount of deposit collection and loan disbursement. The loan recovery and bad loan amounts are also the dependent variables of our study. There are mainly three types of deposit, saving deposit, special fixed deposit and fixed deposit. There are many sub types of saving deposit, bal saving deposit, nari saving deposit, jestha nagarik saving deposit, prashik saving deposit and shareholder saving deposit. There

are numerous types of loans, deprived sector loan, housing loan, educational loan, personal loan, industrial loan, business/trading loan, hire purchase loan, agriculture loan, foreign employment loan, social loan, health loan, tourism loan and other miscellaneous loan. There are many independent variables that affect the entire deposit collection and loan management process. These independent variables are level of employment, marginal propensity to save, fruitful business environment, volume of industrial and trading transactions, social security, knowledge and accessibility of banking system, unstable source of income, mismatch of loan purpose, week collateral, failure of the project, poor pre- investment analysis, return from project not up to expectation, lack of follow up, bad intention of the client, financial mismanagement, habit to pay only when cash on hand and others(socio-economic and cultural factors).

3.5 Tools for Analysis

To achieve the objective of this study some financial or accounting tools and statistical tools are used.

3.5.1 Financial Tools

The following financial or accounting tools are used to achieve the objective of this research study.

3.5.1.1 Credit Deposit Ratio

Credit deposit ratio is a commonly used statistic for assessing a bank's liquidity by dividing the banks total loans (credit) by its total deposits. This number, also known as the credit deposit ratio, can be expressed as a percentage. If the ratio is too high, it means that banks might not have enough liquidity to cover any unforeseen fund requirements; if the ratio is too low, banks may not be earning as much as they could be.

The loan to deposit ratio is used to calculate a lending institution's ability to cover withdrawals made by its customers. A lending institution that accepts deposits must have a certain measure of liquidity to maintain its normal daily operations. Loans given to its customers are mostly not considered liquid

meaning that they are investments over a longer period of time. Although a bank will keep a certain level of mandatory reserves, they may also choose to keep a percentage of their non-lending investing in short term securities to ensure that any monies needed can be accessed in the short term.

Credit deposit ratio is an index of the health of banking system in terms of demand for credit in proportion to total deposit growth in the banking sector. A declining credit deposit ratio implies that banking sector was flush with funds without any corresponding demand for credit affecting the bank's profitability in the long run as they have to pay interest to depositors without corresponding income from the credit outflow.

Credit Deposit Ratio = $\frac{Credit(Loan)}{Deposit}$

3.5.1.2 Net Profit to Total Deposit Ratio

This ratio enables to evaluate what extent the management has been successful to mobilize the deposits in generating profit. Higher ratio represents better utilization of deposit. It is calculated by the following formula.

Net Profit to Total Deposit Ratio = $\frac{Net\ Profit}{Total\ Deposit}$ X 100

3.5.1.3 Return on Investment Ratio

This ratio measures the percentage of return on total investment. A high ratio indicates bank's efficiency is more beneficial on its investment. It is calculated as,

Return on Investment Ratio = $\frac{Net\ Profit}{Total\ Investment}$ X 100

3.5.2 Statistical Tools

The following statistical tools are used to achieve the objective of this research study.

3.5.2.1 Arithmetic Mean or Average

The measure of central tendency most commonly known and recognized is the arithmetic average, which is frequently called the arithmetic mean or, more simply, the mean. It is calculated by adding together all the items in a group or series, and dividing their sum by the number of items. The arithmetic mean or average value is a single value within the range of the data that is used to represent all of the values in the series. Since an average is somewhere within the range of the data, it is also called a measure of central value or measure of central tendency. Since an average represents the entire data, its value lies somewhere in between the two extremes that is the largest and the smallest items. There are various types of averages. Among them, this research study uses arithmetic mean. The formula for calculating arithmetic mean is given below.

$$\bar{X} = \frac{\sum X}{N}$$

Where, $\bar{X}$ = Arithmetic Mean or average

$\sum X$ = Summation of total values of the variable

N = Number of items (observations)

3.5.2.2 Standard Deviation

The concentration of the items around the central part of distribution is given by the arithmetic mean but it does not give the clear picture about the distribution. Two distributions with the same mean may differ in the scattering of the items from the central value. Thus measure of dispersion is needed for determining the variability, homogeneity, consistency, uniformity, stability, motionlessness and equitability of the distribution. The standard deviation, also called the root mean-square deviation, is defined as the square root of the mean of the squared deviations. The deviations of the items from their arithmetic average are squared, these squares are summed, the sum is divided by the number of items, and the square root of the result is extracted. It is also denoted by the small Greek letter σ (sigma). A small standard deviation means a high degree of uniformity of the distribution as well as homogeneity of a series and

a large standard deviation means just the opposite. Hence, Standard deviation is extremely useful in judging the representativeness of the mean. The formula for calculating the standard deviation is given below.

$\sigma_X = \sqrt{\frac{\sum X^2}{N}}$

Where, X = A variable representing the data items of the series

σ_X = Standard deviation of X variable

x = X- $\bar{X}$ (Deviation from mean)

$\sum x^2$ = Sum of the squares of the deviations measured form the arithmetic mean

N = Number of items of the observation or distribution

3.5.2.3 Coefficient of Variation

The coefficient of variation is the corresponding relative measure of dispersion comparable across distributions. It is defined as the ratio of the standard deviation to the mean expressed in resulting percentage. It is used in such cases where there is necessity to compare the variability of two or more series or distributions. A distribution with smaller coefficient of variation is said to be less variable or more homogeneous or more consistent or more uniform or more stable or more stationary or more equitable than other. Similarly the distribution having greater coefficient of variation is said to be more variable or more heterogeneous or less consistent or less uniform or less stable or less stationary or less equitable than other. The formula for calculating the coefficient of variation is given below.

Coefficient of Variation (C.V.) = $\frac{\sigma_X}{\bar{X}} \times percentage$

Where, σ_X = Standard deviation and $\bar{X}$ = Arithmetic mean

3.5.2.4 Coefficient of Correlation

The term correlation (or co-ordination) shows the relationship between two such variables in which changes in the values of one independent variable

causes the change in the value of the other dependent variable. Karl Person's co-efficient of correlation is calculated to study the extent or degree of correlation between two variables. Coefficient of correlation can be positive, negative or zero. If the both series move in the same direction and the variations are proportionate there would be positive correlation between them. On the other hand, if the two series move in reverse or opposite directions, and the variations in their values are always proportionate there is negative correlation between them. If the value of coefficient of correlation is zero it can be said that there is no relationship between the variations of the two series and there is no correlation between them.

The coefficient of correlation always varies between the two limits of +1 and -1. Where there perfect positive correlation, its value is +1 and when there is perfect negative correlation its value is -1. Its mid-point is 0, which indicates absence of correlation. Lastly the value of this co-efficient of correlation is always between +1 and -1. It cannot exceed unity.

The formula for the calculation of co-efficient of correlation is as follows.

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

Where, r = Coefficient of correlation

$\sum XY$ = The summation of the product of items in the two series

$\sum X$ and $\sum Y$ = The summation of X and Y series respectively

$\sum X^2$ and $\sum Y^2$ = The summation of square of items in X and Y series respectively

N = The number of pair observations

In deviation form,

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

Where, x=X-$\bar{X}$ and y=Y-$\bar{Y}$

Karl Person's coefficient of correlation has been used to find out the relationship between the following variables.

1. The coefficient of correlation between total deposit and total loan.
2. The coefficient of correlation between total deposit and net profit.
3. The coefficient of correlation between total loan and net profit.

However there are three types of correlation coefficients, simple correlation coefficient, multiple correlation coefficients and partial correlation coefficient. The above explained correlation between only two variables (dependent variable and independent variable) is termed as simple correlation coefficient. If there are two or more than two independent variables which affect the dependent variable then it is the case of multiple and partial correlation coefficient. If the relationship between the dependent variable and only one independent variable is studied by keeping all the other independent variables as constant, such correlation analysis comes under the partial correlation analysis and if the relationship of the dependent variable and the entire all independent variables is studied, it is known as multiple correlation analysis. But the present research study uses only simple correlation analysis.

3.5.2.4.1 Probable Error of Coefficient of Correlation

After the calculation of coefficient of correlation the next thing is to find out the extent to which it is dependable, reliable or significant. For this purpose the probable error of the coefficient of correlation is calculated. The formula for finding out the probable error of the Karl Person's coefficient of correlation is,

P. Err.= $0.6745\ \frac{1-r^2}{\sqrt{n}}$

Where,

P. Err. = Probable error of coefficient of correlation

r = Coefficient of correlation

n = Number of pairs of observations

In order to conclude whether the coefficient of correlation is significant or not, the following points should be used.

i. If the coefficient of correlation is less than its probable error it is not at all significant, or there is no evidence of correlation.

ii. If the coefficient of correlation is more than six times its probable error it is definitely significant.

iii. If the probable error is not much and if the coefficient of correlation is 0.5 or more it is generally considered to be significant.

If the probable error is added to and subtracted from the coefficient of correlation it would give two such limits within which the value of coefficient of correlation is reasonably expected to vary. In other words the probable error of the correlation coefficient can be used to determine the limits within the population correlation coefficient lies. The limits for population correlation coefficient are r ± P. Err. It should be noted that the coefficient of correlation expresses the relationship between two series, and not between individual items of the series.

3.5.2.4.2 Coefficient of Determination

The coefficient of determination is used to test the fitness (goodness) of the fitted regression line. The coefficient of determination is a measure of the degree of linear association or correlation between two variables (independent and dependent variable). In other words, coefficient of determination measures the percentage of total variation in dependent variable explained by independent variable. The coefficient of determination can have value ranging from zero to one. If R^2 is equal to 0.75, this indicates that the independent variable used in regression model explain 75 percentage of the total variation in the dependent variable. The value of coefficient of determination can be unity only if the unexplained variation is zero, which simply means that all the data points in the scatter diagram fall exactly on the regression line. Coefficient of determination is the square of the coefficient of correlation. Symbolically by formula, $R^2=(r)^2$ where R^2= Coefficient of determination and r= Coefficient of correlation.

3.5.2.5 Regression Analysis

Regression analysis is a statistical tool (device) for estimation or prediction of the unknown value of dependent variable from the known value of independent variable. It is one of the scientific techniques and is considered as a useful tool for determining the strength of relationship between two or more variables. Prediction or estimation has an important role in the financial sector. Thus this very tool has been selected for the research study. The regression line describes the average relationship between the two series. In fact, there is no difference between the line of the best fit and the regression line though the term line of the best fit is generally used when X series related to time and Y series to the value of a variable. If both X and Y series are variable, the line of the best fit is known as line of regression. The equation describing the regression line is called regression equation.

There are two types of regression analysis, simple regression analysis and multiple regression analysis. The analysis used to describe the average relationship between only two variables at a time is known as simple regression analysis. It is used to study how independent variable influences dependent variable. The extension of simple regression technique or the use of two or more independent variables to estimate the values of a dependent variable is known as multiple regression analysis. It is used to study the influences of independent variables on one dependent variable. Regression analysis includes three tools are as follows.

3.5.2.5.1 Regression Constant

The value of constant, which is the intercept of the model, indicates the average level of dependent variable when independent variable is zero. In other words the regression constant indicates the mean or average effect on dependent variable if the entire independent variable omitted from the model. Symbolically by formula,

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

where,

a = Regression constant

$\sum X$ = The total value of independent variable

$\sum Y$ = The total value of dependent variable

$\sum XY$ = The summation of the product of the independent variable and dependent variable

$\sum X^2$ = The total of the square of items in X series, independent variable

n = Number of pairs of observations

. = The sign of multiplication (i.e. ×)

In Deviation Form, a=$\bar{Y} - b\bar{X}$

Where,

$\bar{Y}$ = The mean of dependent variable (Y series)

$\bar{X}$ = The mean of independent variable (X series)

b = The regression coefficient

Hence we obtained the required regression line as Y_c= a + bX where Y is the dependent variable, X is the independent variable, a is the regression constant and b is the regression coefficient.

3.5.2.5.2 Regression Coefficient

The regression coefficient of the regression line indicates the marginal relationship between the independent variable and the dependent variable in regression analysis. In other words, the regression coefficient describes how changes in independent variable affect the estimated value of dependent variable. Actually regression coefficient is the slope of the estimated regression line. Symbolically by formula,

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

Where,

b = Regression coefficient

$\sum X$ = The total value of independent variable

$\sum Y$ = The total value of dependent variable

$\sum XY$ = The summation of the product of the independent variable and dependent variable

$\sum X^2$ = The total of the square of items in X series, independent variable

n = Number of pairs of observations

In Deviation Form,

b = $\frac{\sum xy}{\sum x^2}$ Where, x =X-$\bar{X}$ and y =Y-$\bar{Y}$

3.5.2.5.3 Standard Error of the Regression Line

Perfect prediction is practically impossible with the help of regression equation. A measure of the precision of the estimates so obtained from the regression equation is provided by the standard error (S.E.) of the estimate or regression line of y on x by symbol $S_{y.x}$. Standard error is a word analogous to standard deviation (which is the measure of dispersion of the observations about the mean of the distribution) and gives a measure of the scattering of the observations about the line of regression. The higher the coefficient of determination, the lower will be the standard error of regression line and the more accurate predictions are likely to be. The standard error of estimate is a measure of the scatter of the points from the regression line. The closer the points lie to the line, the smaller will be the value of $S_{y.x}$ and vice versa. $S_{y.x}$ is to be interpreted in the same way as any other standard deviation. It gives the range on either side of the regression line within which about 68 per cent of the points can be expected to fall, provided the distributions of both variables are approximately normal. A range of $\pm 2S_{y.x}$ should include about 95 per cent of the points and a range of $\pm 3S_{y.x}$ should include practically all of the points. The regression line is a measure of that part of the variability of the y variable which can be explained by the association of y with x. $S_{y.x}$ is a measure of the remaining part of the variability of y that is not explained by the regression line. Obviously if $S_{y.x}$ is large, the reliability of the regression line is questionable. Some standard is necessary, however, in order to determine what constitutes a large or a small value of $S_{y.x}$. The largest value that $S_{y.x}$ can take is

σ_y. That is, if x and y were completely independent, the regression line of y on x would coincide with the x-axis, and all of the values of Y_c or $\hat{Y}$ (Y hat) would be zero. The computation of $S_{y.x}$ would then be identical with the computation of σ_y. Therefore, σ_y is used as the standard for judging whether values of $S_{y.x}$ are large or small.

The formula for calculating the standard error of estimate is as follows.

Standard error of the regression line Y on X, $S_{y.x} = \sqrt{\frac{\sum e^2}{n-k}}$, where,

$S_{y.x}$ = The standard error of regression of Y value from Y_c or $\hat{Y}$ (Y hat)

Y_c or $\hat{Y}$ (Y hat)= The estimated value of Y for given value of X obtained from the line of regression Y on X.

e = Y- Y_c / $\hat{Y}$

k = Number of parameters (i.e. regression constant and regression coefficient)

n = Number of pairs of observations

The smaller the value of standard error of estimate, the closer will be the dots to the regression line and the better the estimates based on the equation for this line. If the standard error of estimate is zero, then there is no variation about the line and the correlation will be perfect. Thus with the help of standard error of estimate, it is possible to ascertain how well and representative the regression line is as a description of the average relationship between two series.

3.5.2.6 Test of Hypothesis

The method of statistics which help in arriving at the criterion for final decision is called test of hypothesis or statistical decision making. A hypothesis is an assumption that make about the population parameter. Alternatively, hypothesis is a conjectural statement of the relationship between two or more variables. Hypothesis statement should be able to show the relationship between variables.

The test of hypothesis is process of testing of significance regarding the parameter of the population on the basis of the sample drawn from the population. The computed value of the statistics may differ from the

hypothetical value of the parameter due to sampling fluctuations. Hence the difference is considered to be insignificant and the hypothesis is accepted. If the difference is large, it has not been arisen due to sampling fluctuations but it is due to some other reason. Hence the difference is considered to be significant and the hypothesis is rejected. Thus the test of hypothesis disclosed the fact whether the difference between the computed statistics and hypothetical parameter is significant or not.

The test of hypothesis includes different methods for reaching the decision making process. Analysis of variance test (ANOVA test) is one method which was developed by R. A. Fisher. F-test or Fisher's test is widely used in analysis of variance. It is basically used to test the hypothesis of equality between two variances. F-test is also used to test the hypothesis of equality among several means. F-test is particularly suitable for experimental work where the assumption of equality of variances is not necessary. ANOVA test is also used to find out whether the estimated regression line is significant or not in regression analysis. The statistical hypothesis can be divided into two types, null hypothesis and alternative hypothesis.

3.5.2.6.1 Null Hypothesis (H_0)

A statistical hypothesis which is stated for the purpose of possible acceptance is called a null hypothesis and is denoted by H_0. In other words null hypothesis is the hypothesis which is tested for possible rejection under the assumption that it is true. It is also called as no difference hypothesis because it assumes that there is no difference between the population value and the sample value such as mean, standard deviation and coefficient of correlation.

3.5.2.6.2 Alternative Hypothesis (H_1)

The counter part or complementary part of null hypothesis is called alternative hypothesis. If null hypothesis is rejected the alternative hypothesis is accepted. The alternative hypothesis is denoted by H_1 for the research study.

3.5.2.6.3 ANOVA Test Procedures

In regression analysis, ANOVA test is used to find out whether the estimated regression line is significant or not. Here, the processes for testing the significance of regression line of loan on deposit are as follows.

I) Hypothesis Setting

Null Hypothesis (H_0) : The regression line is not significant.

Or, H_0: b=0 that is Y does not depend upon X, so not significant.

Alternative Hypothesis (H_1) : The regression line is significant.

Or, H_1: b≠0 that is Y depends upon X, so significant.

II) ANOVA Table

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square Error	F Ratio F^*
(Between Samples) Explained	$\sum\hat{y}^2$	K-1	$\sum\hat{y}^2$/(K-1)	$\frac{\sum\hat{y}^2/(K-1)}{\sum e^2/(n-K)}$
(Within Samples) Unexplained	$\sum e^2$	n-K	$\sum e^2$/(n-K)	
Total	$\sum y^2$	n-1		

Where, n= Number of pair of observations, K=Number of Parameters (for example a and b, i.e. 2) where $\hat{y} = \hat{Y} - \overline{Y}$ and $\overline{Y} = \frac{\sum Y}{n}$

Here, we have

ν_1(degree of freedom at numerator) = K-1 and

ν_2(degree of freedom at denominator) = n-K

III) Conclusion

At 5 percentage level of significance the critical value of F statistic with ν_1(degree of freedom at numerator i. e. K-1) and ν_2(degree of freedom at denominator i. e. n-K) is checked from the critical value of F distribution. If calculated F < critical F(or tabulated F), then H_0 is accepted and H_1 is rejected. If calculated F > critical F(or tabulated F), then H_0 is rejected and H_1 is accepted.

CHAPTER IV

DATA PRESENTATION AND ANALYSIS

This chapter is the main centre of the study. The previous chapters described the plan and the structure of the research. This chapter deals with the examination and explanation of the relationship among different variables.

This chapter includes the financial or accounting analysis and statistical analysis of data which are essential to present the gist of the research work. Thus this chapter is known as the central nervous system of the thesis. All the amounts of deposit, loan and net profit are given in Nepalese Rupees lakhs.

4.1 Financial Analysis

Credit deposit ratio, net profit to total deposit ratio and return on investment ratio financial or accounting tools are used to analyze liquidity strength, utilization of deposit and performance efficiency on investment of NNFL.

4.1.1 Credit Deposit Ratio Analysis

Table 4.1

Credit Deposit Ratio

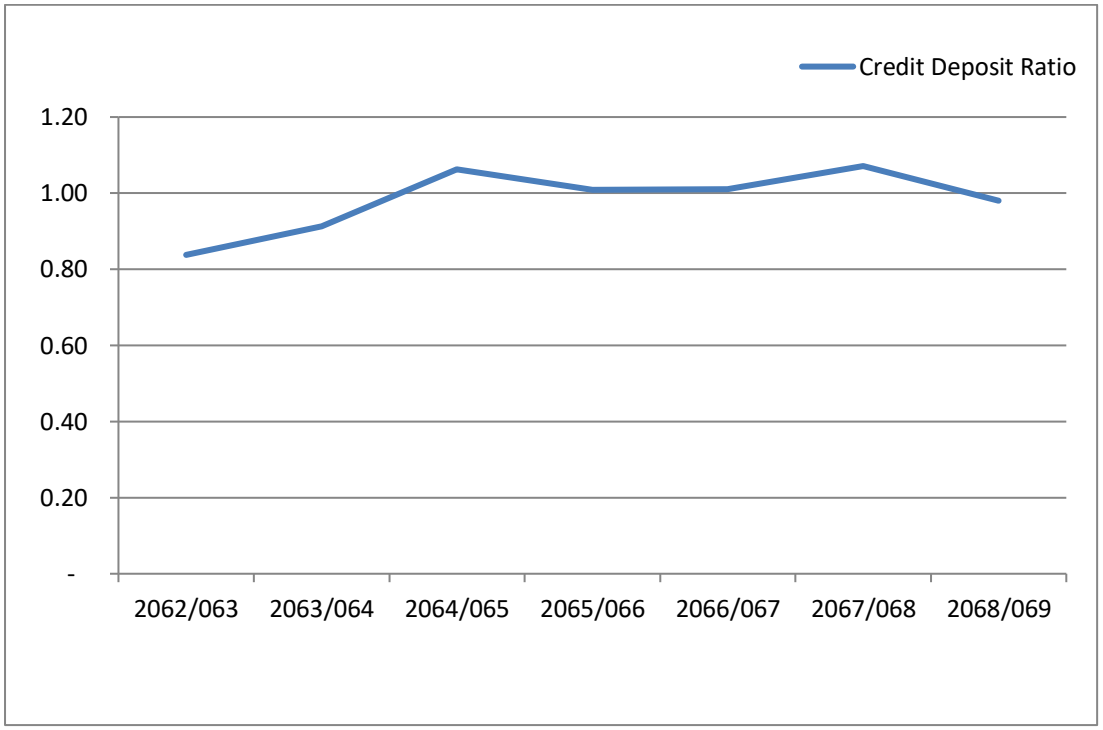
S.N.	Fiscal Year	Deposit	Loan	Credit Deposit Ratio
1	2062/063	11,174.00	9,362.00	0.84
2	2063/064	12,117.00	11,066.00	0.91
3	2064/065	13,312.00	14,136.00	1.06
4	2065/066	16,523.00	16,679.00	1.01
5	2066/067	18,929.00	19,137.00	1.01
6	2067/068	24,030.00	25,741.00	1.07
7	2068/069	31,017.00	30,385.00	0.98

(Source: NNFL Annual Reports)

The credit deposit ratio is less than unity in the first two financial years and then in the next four financial years it exceeded the unity. It shows that the institution has disbursed the loan more than its deposit collection. At the last financial year the credit deposit ratio is less than unity. It shows the liquidity strength of the finance company.

Figure 4.1

Credit Deposit Ratio



(Source: NNFL Annual Reports)

The diagram line of the credit deposit ratio shows that it was increasing from the fiscal year 2062/063 to 2064/065 and then it was decreasing up to the fiscal year 2066/67. After that the credit deposit ratio again increased and it decreased in the last financial year. It shows that NNFL is strong in liquidity position by maintaining the cash reserve ratio (CRR) in accordance with the bank and financial institutions act (BAFIA).

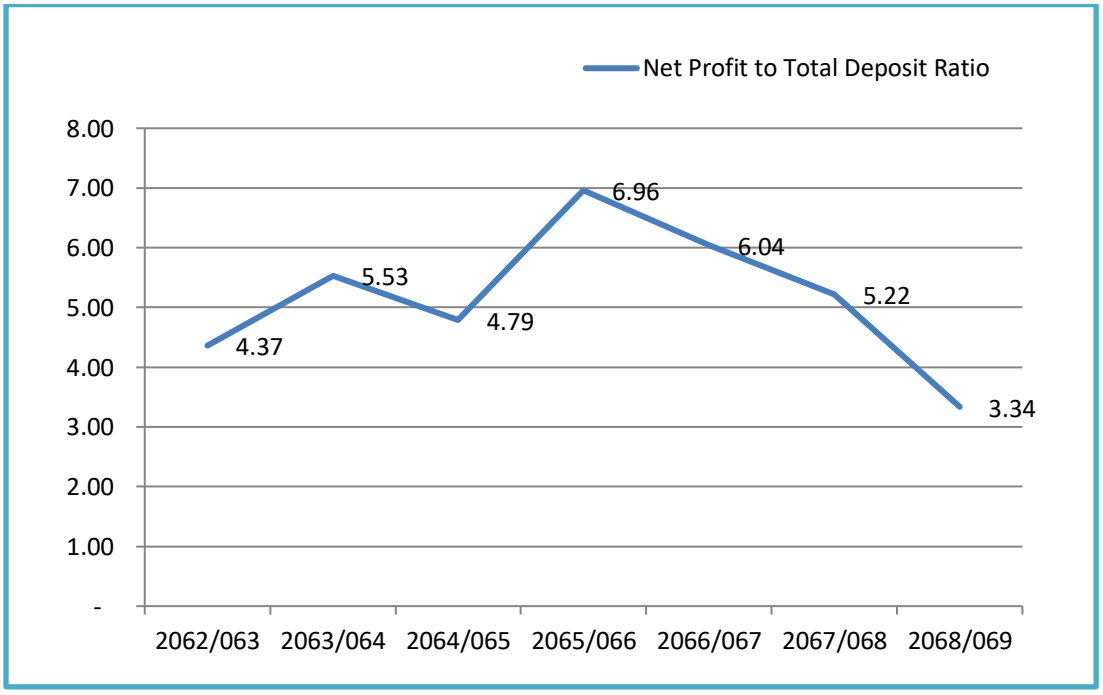
4.1.2 Net Profit to Total Deposit Ratio

Table 4.2
Net Profit to Total Deposit Ratio

S.N.	Fiscal Year	Net Profit	Deposit	Net Profit to Total Deposit Ratio
1	2062/063	487.75	11,174.00	4.37
2	2063/064	670.25	12,117.00	5.53
3	2064/065	637.02	13,312.00	4.79
4	2065/066	1,150.11	16,523.00	6.96
5	2066/067	1,144.16	18,929.00	6.04
6	2067/068	1,254.76	24,030.00	5.22
7	2068/069	1,035.00	31,017.00	3.34

(Source: NNFL Annual Reports)

Figure 4.2
Net Profit to Total Deposit Ratio



(Source: NNFL Annual Reports)

The net profit to total deposit ratio was increased from fiscal year 2062/063 to 2063/064 then it was decreased in the financial year 2064/065. Again it was increased and reached the highest position in FY 2065/066 just before one year

of the merging. After merging the ratio began to decrease year by year. As the data and the figure show decreasing net profit to total deposit ratio, it can be said that the utilization of deposit in NNFL is decreasing after merging.

4.1.3 Return on Investment Ratio

Table 4.3

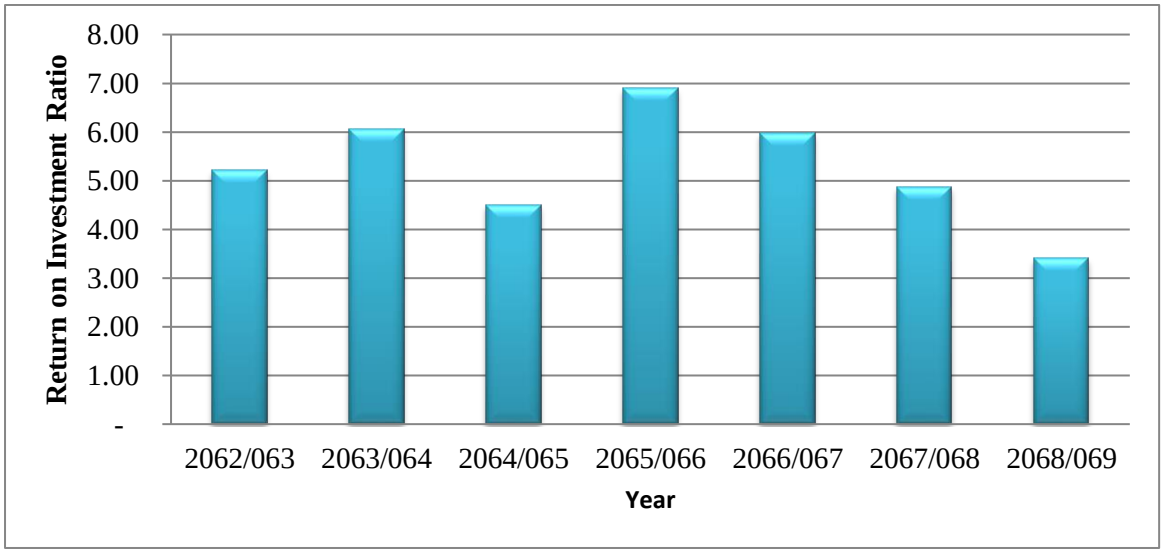
Return on Investment Ratio

S.N.	Fiscal Year	Net Profit	Loan	Return on Investment
1	2062/063	487.75	9,362.00	5.21
2	2063/064	670.25	11,066.00	6.06
3	2064/065	637.02	14,136.00	4.51
4	2065/066	1,150.11	16,679.00	6.90
5	2066/067	1,144.16	19,137.00	5.98
6	2067/068	1,254.76	25,741.00	4.87
7	2068/069	1,035.00	30,385.00	3.41

(Source: NNFL Annual Reports)

Figure 4.3

Return on Investment Ratio



(Source: NNFL Annual Reports)

According to the table and diagram the return on investment ratio is increased from fiscal year 2062/063 to 2063/064 and then it is decreased on the FY

2064/065. On the FY 2065/066 it is again increased and reached the highest position. Thus the return on investment ratio is volatile before merging. After merging the return on investment ratio of NNFL is decreasing up to the last fiscal year 2068/069. The data and the figure of NNFL after merging show the decreasing return on investment ratio. Thus it can be said that the benefit and efficiency of NNFL on its investment is decreasing after merging.

4.2 Statistical Analysis

The statistical analysis includes arithmetic mean, standard deviation, coefficient of variation, the correlation analysis, regression analysis and test of hypothesis.

4.2.1 Arithmetic Mean

Table 4.4

Calculation of Arithmetic Mean of Deposit, Loan and Net Profit

S.no.	Fiscal Year	Deposit	Loan	Net Profit
1	2062/063	11174.00	9362.00	487.75
2	2063/064	12117.00	11066.00	670.25
3	2064/065	13312.00	14136.00	637.02
4	2065/066	16523.00	16679.00	1150.11
5	2066/067	18929.00	19137.00	1144.16
6	2067/068	24030.00	25741.00	1254.76
7	2068/069	31017.00	30385.00	1035.00
Summation		127102.00	126506.00	6379.05
Mean		18157.43	18072.29	911.29

(Source: NNFL Annual Reports)

Arithmetic mean of deposit, loan and net profit is calculated by the following formula,

$$\bar{X} = \frac{\sum X}{N}$$

The arithmetic mean of deposit, loan and net profit are obtained by calculation 18157.43, 18072.29 and 911.29 respectively.

4.2.2 Standard Deviation

Table 4.5

Standard Deviation of Deposit

S.no.	Fiscal Year	Deposit(X)	$x=X-\bar{X}$	x^2
1	2062/063	11174.00	(6983.43)	48768274.61
2	2063/064	12117.00	(6040.43)	36486777.33
3	2064/065	13312.00	(4845.43)	23478178.04
4	2065/066	16523.00	(1634.43)	2671356.76
5	2066/067	18929.00	771.57	595322.47
6	2067/068	24030.00	5872.57	34487095.18
7	2068/069	31017.00	12859.57	165368577.33
Summation		127102.00	0.00	311855581.71
Mean		18157.43		

(Source: NNFL Annual Reports)

Standard deviation of deposit is calculated by the following formula,

$$\sigma_X = \sqrt{\frac{\sum X^2}{N}} \qquad \text{or, } \sigma_X = \sqrt{\frac{311855581.71}{7}} \qquad \therefore \sigma_X = 6674.64$$

Table 4.6

Standard Deviation of Loan

S.no.	Fiscal Year	Loan(X)	$x=X-\bar{X}$	x^2
1	2062/063	9,362.00	(8710.29)	75869077.22
2	2063/064	11,066.00	(7006.29)	49088039.51
3	2064/065	14,136.00	(3936.29)	15494345.22
4	2065/066	16,679.00	(1393.29)	1941245.08
5	2066/067	19,137.00	1064.71	1133616.51
6	2067/068	25,741.00	7668.71	58809178.80
7	2068/069	30,385.00	12312.71	151602933.08
Summation		126506.00	0.00	353938435.43
Mean		18072.29		

(Source: NNFL Annual Reports)

Standard deviation of loan is calculated by the following formula,

$$\sigma_X = \sqrt{\frac{\sum X^2}{N}} \qquad \text{or, } \sigma_X = \sqrt{\frac{353938435.43}{7}} \qquad \therefore \sigma_X = 7110.74$$

Table 4.7

Standard Deviation of Net Profit

S.no.	Fiscal Year	Net Profit	$x=X-\bar{X}$	x^2
1	2062/063	487.75	(423.54)	179388.55
2	2063/064	670.25	(241.04)	58101.66
3	2064/065	637.02	(274.27)	75225.60
4	2065/066	1,150.11	238.82	57033.63
5	2066/067	1,144.16	232.87	54227.11
6	2067/068	1,254.76	343.47	117969.68
7	2068/069	1,035.00	123.71	15303.46
Summation		6379.05	(0.00)	557249.68
Mean		911.29		

(Source: NNFL Annual Reports)

Standard deviation of net profit is calculated by the following formula,

$$\sigma_X = \sqrt{\frac{\sum X^2}{N}} \qquad \text{or, } \sigma_X = \sqrt{\frac{557249.68}{7}} \qquad \therefore \sigma_X = 282.15$$

The obtained standard deviation of deposit, loan and net profit are 6674.64, 7110.74 and 282.15 respectively. Thus, the standard deviation of loan is highest among deposit, loan and net profit. Standard deviation of net profit is lowest among them. Therefore, there is a high degree of uniformity of the distribution as well as homogeneity of the series of net profit than the series of loan and deposit. Similarly there is a low degree of uniformity of the distribution as well as high heterogeneity of the series of loan than the series of net profit and deposit. The distribution of deposit is more homogeneous than loan but more heterogeneous than net profit.

4.2.3 Coefficient of Variation

Table 4.8

Coefficient of Variation of Deposit, Loan and Net Profit

S.no.	Deposit	Loan	Net Profit
Mean($\bar{X}$)	18157.43	18072.29	911.29
Standard Deviation(σ_X)	6674.64	7110.74	282.15
Coefficient of Variation(C.V.)	36.76	39.35	30.96

(Source: NNFL Annual Reports)

Coefficient of variation of deposit, loan and net profit is calculated by the following formula.

Coefficient of Variation (C.V.) = $\frac{\sigma_X}{\bar{X}} \times percentage$

Coefficient of variation of deposit, loan and net profit is obtained 36.76, 39.35 and 30.96 respectively. The coefficient of variation of loan is highest among these three variables. The lowest coefficient of variation is obtained of net profit. Therefore net profit is less variable or more homogeneous or more consistent or more uniform or more stable or more stationary or more equitable than deposit and loan. Similarly loan is more variable or more heterogeneous or less consistent or less uniform or less stable or less stationary or less equitable than net profit and deposit. The distribution of deposit is more homogeneous than loan but more heterogeneous than net profit.

4.2.4 Correlation Analysis

Table 4.9

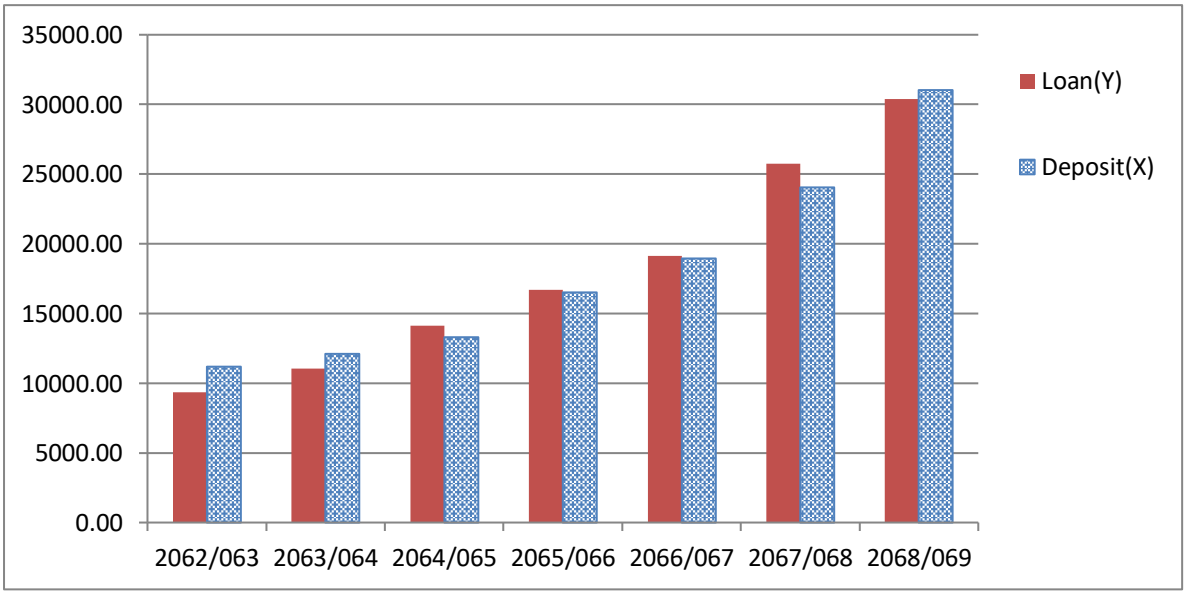
Karl Pearson's Coefficient of Correlation of Deposit (X) and Loan(Y) variables

S.N.	Fiscal Year	Deposit (X)	Loan (Y)	XY	X^2	Y^2
1	2062/063	11174.00	9362.00	104610988.00	124858276.00	87647044.00
2	2063/064	12117.00	11066.00	134086722.00	146821689.00	122456356.00
3	2064/065	13312.00	14136.00	188178432.00	177209344.00	199826496.00
4	2065/066	16523.00	16679.00	275587117.00	273009529.00	278189041.00
5	2066/067	18929.00	19137.00	362244273.00	358307041.00	366224769.00
6	2067/068	24030.00	25741.00	618556230.00	577440900.00	662599081.00
7	2068/069	31017.00	30385.00	942451545.00	962054289.00	923248225.00
Summation		127102.00	126506.00	2625715307.00	2619701068.00	2640191012.00

(Source: NNFL Annual Reports)

Figure 4.4

Correlation of Deposit and Loan



(Source: NNFL Annual Reports)

The correlation coefficient between loan and deposit is calculated by using Karl Pearson's coefficient of correlation formula.

$$i.e.\ r = \frac{N\sum XY - \sum X \times \sum Y}{\sqrt{[N\sum X^2 - (\sum X)^2]}\ \sqrt{[N\sum Y^2 - (\sum Y)^2]}}$$

$$\text{or, } r = \frac{7\times 2625715307.00 - 127102.00\times 126506.00}{\sqrt{7\times 2619701068.00 - (127102.00)^2}\ \sqrt{7\times 2640191012.00 - (126506.00)^2]}}$$

$\therefore\ r$ = 0.9893456

Coefficient of Determination (R^2) = r^2 =0.9788048

Probable Error Formula, P.Err. = $0.6745\ \frac{1-r^2}{\sqrt{n}}$

i.e. P.Err.= $0.6745\times \frac{1-(0.9893456)^2}{\sqrt{7}}$ = 0.005403 and 6 times P.Err.= 0.03242065

Coefficient of Correlation (r) = 0.9893456

Coefficient of Determination (R^2) = 0.9788048

The correlation coefficient between deposit and loan is calculated by using Karl Pearson's coefficient of correlation formula. There is positive correlation between deposit and loan. The coefficient of correlation (r) is 0.9893456 and the coefficient of determination (R^2) is 0.9788048. It shows that there is 97.88% effect of deposit collection on loan disbursement. It means that deposit and loan are highly related to each other.

The probable error of coefficient of correlation between deposit and loan is 0.005403. The six times of probable error is 0.03242065. Hence the coefficient of correlation is more than six times of its probable error. Thus it is definitely significant.

Table 4.10

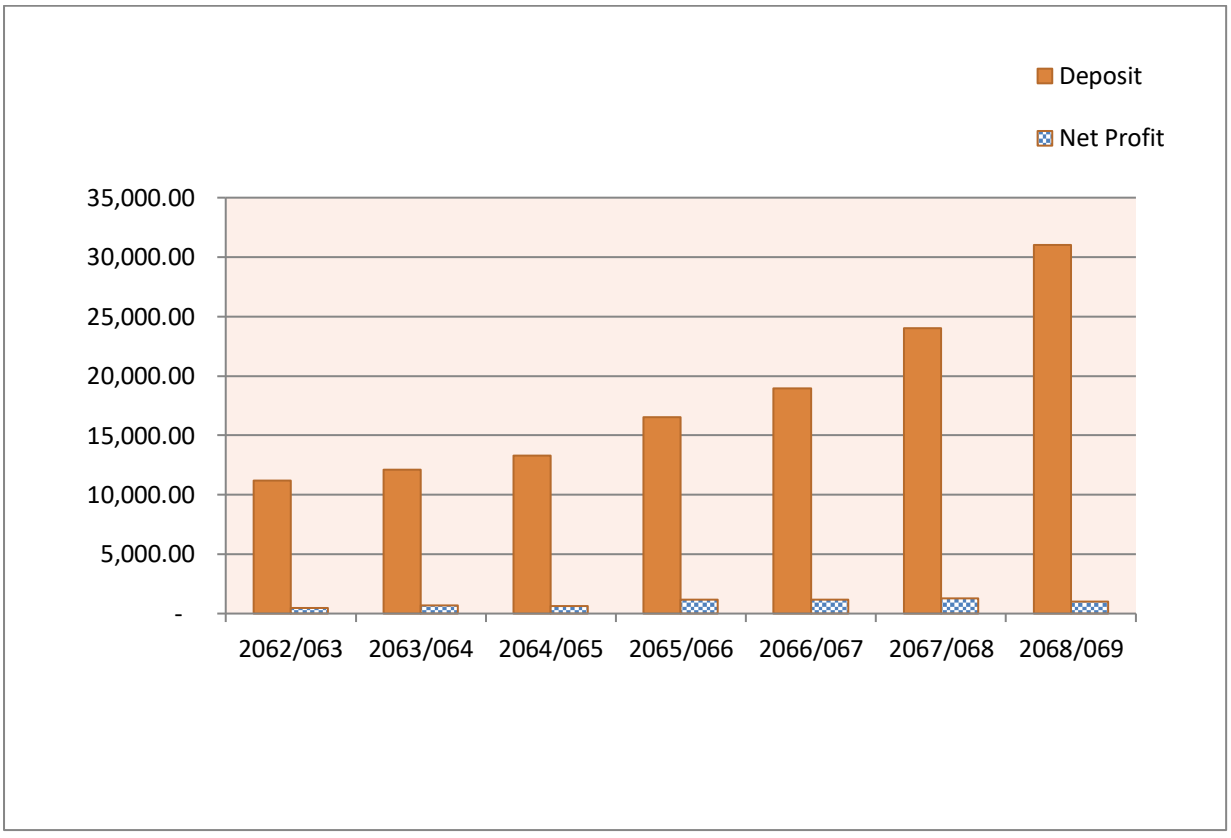
Karl Pearson's Coefficient of Correlation of Deposit(X) and Net Profit(Y) variables

S.N.	Fiscal Year	Deposit (X)	Net Profit (Y)	XY	X^2	Y^2
1	2062/063	11174.00	487.75	5450118.50	124858276.00	237900.06
2	2063/064	12117.00	670.25	8121419.25	146821689.00	449235.06
3	2064/065	13312.00	637.02	8480010.24	177209344.00	405794.48
4	2065/066	16523.00	1150.11	19003267.53	273009529.00	1322753.01
5	2066/067	18929.00	1144.16	21657804.64	358307041.00	1309102.11
6	2067/068	24030.00	1254.76	30151882.80	577440900.00	1574422.66
7	2068/069	31017.00	1035.00	32102595.00	962054289.00	1071225.00
Summation		127102.00	6379.05	124967097.96	2619701068.00	6370432.38

(Source: NNFL Annual Reports)

Figure 4.5

Correlation of Net Profit and Deposit



(Source: NNFL Annual Reports)

The correlation coefficient between deposit and net profit is calculated by using Karl Pearson's coefficient of correlation formula.

$$i.e.\ r = \frac{N\sum XY - \sum X \times \sum Y}{\sqrt{[N\sum X^2 - (\sum X)^2]}\ \sqrt{[N\sum Y^2 - (\sum Y)^2]}}$$

$$\text{or, } r = \frac{7\times 124967097.96 - 127102.00\times 6379.05}{\sqrt{7\times 2619701068.00 - (127102.00)^2}\ \sqrt{7\times 6370432.38 - (6379.05)^2]}}$$

$\therefore r$ = 0.693333682, Coefficient of Determination (R^2) = r^2=0.480711595

Probable Error Formula, P. Err. = $0.6745\frac{1-r^2}{\sqrt{n}}$

i.e. P. Err. =$0.6745 \times \frac{1-(0.693333682)^2}{\sqrt{7}}$ = 0.132385847 and

6 times P. Err. = 0.794315085

Coefficient of Correlation(r) = 0.693333682

Coefficient of Determination (R^2) = 0.480711595

Here it is seen that the coefficient of correlation between deposit and net profit is not definitely significant since the coefficient of correlation is less than six times of its probable error. But still there is positive correlation between deposit and net profit. It can be said that 48.07% variation in net profit is due to deposit collection.

Table 4.11

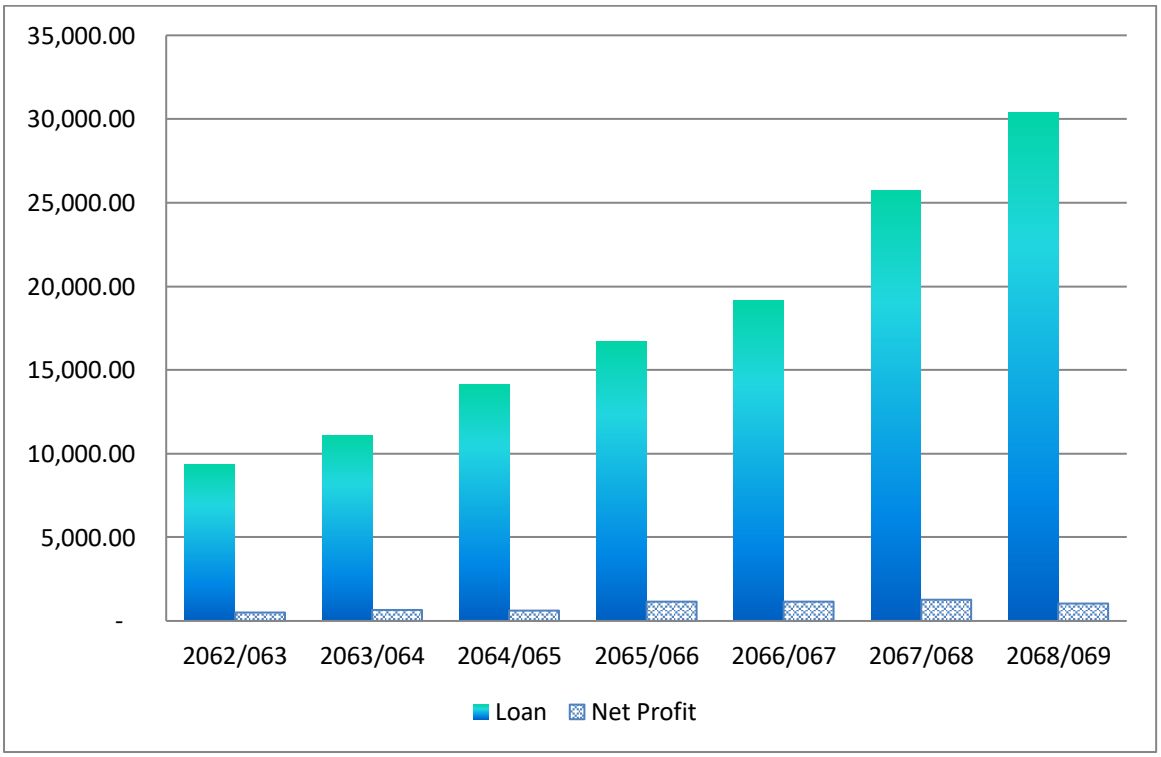
Karl Pearson's Coefficient of Correlation of Loan(X) and Net Profit(Y) variables

S.N.	Fiscal Year	Loan(X)	Net Profit (Y)	XY	X^2	Y^2
1	2062/063	9362.00	487.75	4566315.50	87647044.00	237900.06
2	2063/064	11066.00	670.25	7416986.50	122456356.00	449235.06
3	2064/065	14136.00	637.02	9004914.72	199826496.00	405794.48
4	2065/066	16679.00	1150.11	19182684.69	278189041.00	1322753.01
5	2066/067	19137.00	1144.16	21895789.92	366224769.00	1309102.11
6	2067/068	25741.00	1254.76	32298777.16	662599081.00	1574422.66
7	2068/069	30385.00	1035.00	31448475.00	923248225.00	1071225.00
Summation		126506.00	6379.05	125813943.49	2640191012.00	6370432.38

(Source: NNFL Annual Reports)

Figure 4.6

Correlation of Net Profit and Loan



(Source: NNFL Annual Reports)

The correlation coefficient between loan and net profit is calculated by using Karl Pearson's coefficient of correlation formula.

$$i.e.\ r = \frac{N\sum XY - \sum X \times \sum Y}{\sqrt{[N\sum X^2 - (\sum X)^2]}\ \sqrt{[N\sum Y^2 - (\sum Y)^2]}}$$

$$\text{or, } r = \frac{7\times 125813943.49 - 126506.00 \times 6379.05}{\sqrt{7\times 2640191012.00 - (126506.00)^2}\ \sqrt{7\times 6370432.38 - (6379.05)^2]}}$$

$\therefore r$ = 0.74978488, Coefficient of Determination (R^2)=r^2=0.56217737

Probable Error Formula, P.Err.=$0.6745\frac{1-r^2}{\sqrt{n}}$

i.e. P.Err.=$0.6745\times \frac{1-(0.74978488)^2}{\sqrt{7}}$ = 0.111617205 and

6 times P.Err.= 0.669703231

Coefficient of Correlation(r) = 0.74978488

Coefficient of Determination (R^2) = 0.56217737

These data show that there is positive correlation between loan and net profit. Since the coefficient of correlation is more than six times of its probable error it can be said that it is definitely significant. The coefficient of determination shows that 56.21% variation in net profit is due to loan disbursement.

4.2.5 Regression Analysis

It is assumed that the deposit amount as independent variable and the amount of loan disbursement as dependent variable for estimating regression line of loan on deposit.

Table 4.12

Regression line of Loan(Y) on Deposit(X)

S.N.	Fiscal Year	Loan (Y)	Deposit (X)	XY	X^2	$\hat{Y}$	e	e^2
1	2062/063	9362.00	11174.00	104610988.00	124858276.00	10711.84	-1349.84	1822080.43
2	2063/064	11066.00	12117.00	134086722.00	146821689.00	11705.75	-639.75	409285.30
3	2064/065	14136.00	13312.00	188178432.00	177209344.00	12965.27	1170.73	1370612.84
4	2065/066	16679.00	16523.00	275587117.00	273009529.00	16349.62	329.38	108491.40
5	2066/067	19137.00	18929.00	362244273.00	358307041.00	18885.51	251.49	63246.33
6	2067/068	25741.00	24030.00	618556230.00	577440900.00	24261.90	1479.10	2187742.33
7	2068/069	30385.00	31017.00	942451545.00	962054289.00	31626.10	-1241.10	1540337.88
Summation		126506.00	127102.00	2625715307.00	2619701068.00	126506.00	0.00	7501796.50

(Source: NNFL Annual Reports)

By formula of regression constant (a) and regression coefficient (b),

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

$$\text{or, } a = \frac{2619701068.00 \times 126506.00 - 127102.00 \times 2625715307.00}{7 \times 2619701068.00 - (127102.00)^2},$$

$\therefore$ a = -1065.40 and $b = \frac{n\sum XY - (\sum X)(\sum Y)}{n\sum X^2 - (\sum X)^2}$

$$\text{or, } b = \frac{7 \times 2625715307.00 - 127102.00 \times 126506.00}{7 \times 2619701068.00 - (127102.00)^2}, \therefore b = 1.05399$$

Therefore the regression constant or the slope of the estimated regression line of loan on deposit (b) is 1.05399. It means that when the independent variable deposit is increased by one unit then the increment in dependent variable loan will be 1.05399.

Hence, the estimated regression line Y on X, $Y_c/\hat{Y}$ = -1065.40 + 1.05399X

Standard error of the regression line Y on X, $S_{y.x}$ $= \sqrt{\frac{\sum e^2}{n-k}}$

or, $S_{y.x} = \sqrt{\frac{7501796.50}{7-2}}$ = 1224.892

Standard error of the regression line loan(Y) on deposit(X), $S_{y.x}$ is 1224.892 and standard deviation of loan (σ_Y) is 7110.74. Hence the scatter about the regression line of loan on deposit is approximately one-sixth as great as the scatter about the arithmetic mean.

It is assumed that the deposit amount as independent variable and the amount of net profit as dependent variable for estimating regression line of net profit on deposit.

Table 4.13

Regression line of Net Profit(Y) on Deposit(X)

S.N.	Fiscal Year	Net Profit (Y)	Deposit (X)	XY	X^2	$\hat{Y}$	e	e^2
1	2062/063	487.75	11174.00	5450118.50	124858276.00	706.62	-218.87	47904.30
2	2063/064	670.25	12117.00	8121419.25	146821689.00	734.26	-64.01	4097.05
3	2064/065	637.02	13312.00	8480010.24	177209344.00	769.28	-132.26	17493.14
4	2065/066	1150.11	16523.00	19003267.53	273009529.00	863.39	286.72	82208.04
5	2066/067	1144.16	18929.00	21657804.64	358307041.00	933.91	210.25	44206.62
6	2067/068	1254.76	24030.00	30151882.80	577440900.00	1083.41	171.35	29361.55
7	2068/069	1035.00	31017.00	32102595.00	962054289.00	1288.18	-253.18	64102.58
Summation		6379.05	127102.00	124967097.96	2619701068.00	6379.05	0.00	289373.30

(Source: NNFL Annual Reports)

By formula of regression constant (a) and regression coefficient (b),

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

$$\text{or, } a = \frac{2619701068.00 \times 6379.05 - 127102.00 \times 124967097.96}{7 \times 2619701068.00 - (127102.00)^2},$$

$\therefore$ a = 379.1297 and b = $\frac{n\sum XY-(\sum X)(\sum Y)}{n\sum X^2-(\sum X)^2}$

or, b = $\frac{7\times 124967097.96- 127102.00\times 6379.05}{7\times 2619701068.00-(127102.00)^2}$, $\therefore$ b = 0.02931

Therefore the regression constant or the slope of the estimated regression line of net profit on deposit (b) is 0.02931. It means that when the independent variable deposit is increased by one unit then the increment in dependent variable net profit will be 0.02931.

Hence the estimated regression line Y on X, $Y_c/\hat{Y}$ = 379.1297 + 0.02931X

Standard error of the regression line Y on X, $S_{y.x} = \sqrt{\frac{\sum e^2}{n-k}}$

or, $S_{y.x} = \sqrt{\frac{289373.30}{7-2}}$ = 240.5715

Standard error of the regression line of net profit (Y) on deposit(X), $S_{y.x}$ is 240.5715 and standard deviation of net profit (σ_Y) is 282.15. Hence the scatter about the regression line of net profit on deposit is approximately seventeen-twentieth as great as the scatter about the arithmetic mean.

It is assumed that the loan amount as independent variable and the amount of net profit as dependent variable for estimating regression line of net profit on loan.

Table 4.14

Regression line of Net Profit(Y) on Loan(X)

S.N.	Fiscal Year	Net Profit (Y)	Loan (X)	XY	X^2	$\hat{Y}$	e	e^2
1	2062/063	487.75	9362.00	4566315.50	87647044.00	652.16	-164.41	27029.15
2	2063/064	670.25	11066.00	7416986.50	122456356.00	702.85	-32.60	1062.81
3	2064/065	637.02	14136.00	9004914.72	199826496.00	794.19	-157.17	24700.98
4	2065/066	1150.11	16679.00	19182684.69	278189041.00	869.84	280.27	78550.39
5	2066/067	1144.16	19137.00	21895789.92	366224769.00	942.97	201.19	40477.86
6	2067/068	1254.76	25741.00	32298777.16	662599081.00	1139.44	115.32	13298.07
7	2068/069	1035.00	30385.00	31448475.00	923248225.00	1277.61	-242.61	58857.27
Summation		6379.05	126506.00	125813943.49	2640191012.00	6379.05	0.00	243976.52

(Source: NNFL Annual Reports)

By formula of regression constant (a) and regression coefficient (b),

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

$$\text{or, } a = \frac{2640191012.00 \times 6379.05 - 126506.00 \times 125813943.49}{7 \times 2640191012.00 - (126506.00)^2},$$

$\therefore$ a = 373.6290 and $b = \frac{n\sum XY - (\sum X)(\sum Y)}{n\sum X^2 - (\sum X)^2}$

$$\text{or, } b = \frac{7 \times 125813943.49 - 126506.00 \times 6379.05}{7 \times 2640191012.00 - (126506.00)^2}, \quad \therefore b = 0.02975$$

Therefore the regression constant or the slope of the estimated regression line of net profit on loan (b) is 0.02975. It means that when the independent variable loan is increased by one unit then the increment in dependent variable net profit will be 0.02975.

Hence the estimated regression line Y on X, $Y_c/\hat{Y}$ = 373.6290+ 0.02975X

Standard error of the regression line Y on X, $S_{y.x} = \sqrt{\frac{\sum e^2}{n-k}}$

or, $S_{y.x}$ $= \sqrt{\frac{243976.52}{7-2}} =$ 220.8965

Standard error of the regression line of net profit (Y) on loan(X), $S_{y.x}$ is 220.8965 and standard deviation of net profit(σ_Y) is 282.15. Hence the scatter about the regression line of net profit on loan is approximately thirty nine-fiftieth as great as the scatter about the arithmetic mean.

4.2.5.1 Analysis of Variance (ANOVA) Test

In regression analysis, ANOVA test is used to find out whether the estimated regression line is significant or not. Here, the processes for testing the significance of regression line of loan on deposit are as follows.

I) Hypothesis Setting

Null Hypothesis (H_0) : The regression line is not significant.

Or, H_0: b=0 that is Y does not depend upon X, so not significant.

Alternative Hypothesis (H_1) : The regression line is significant.

Or, H_1: b≠0 that is Y depends upon X, so significant.

II) ANOVA Table

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square Error	F Ratio F^*
(Between Samples) Explained	$\sum\hat{y}^2$	K-1	$\sum\hat{y}^2$/(K-1)	$\frac{\sum\hat{y}^2/(K-1)}{\sum e^2/(n-K)}$
(Within Samples) Unexplained	$\sum e^2$	n-K	$\sum e^2$/(n-K)	
Total	$\sum y^2$	n-1		

Where, n(Number of pair of observations)=7, K(Number of Parameters)=2, and

$\hat{y} = \hat{Y} - \overline{Y}$, $\overline{Y} = \frac{\sum Y}{n}$

Here, we have

ν_1(degree of freedom at numerator) = K-1=1 and

ν_2(degree of freedom at denominator) = n-K=5

Table 4.15

Analysis of Variance (ANOVA) Test of regression line of loan on deposit

S.N.	Fiscal Year	Loan(Y)	Deposit(X)	XY	X^2	$\hat{Y}$
1	2062/063	9362.00	11174.00	104610988.00	124858276.00	10711.84
2	2063/064	11066.00	12117.00	134086722.00	146821689.00	11705.75
3	2064/065	14136.00	13312.00	188178432.00	177209344.00	12965.27
4	2065/066	16679.00	16523.00	275587117.00	273009529.00	16349.62
5	2066/067	19137.00	18929.00	362244273.00	358307041.00	18885.51
6	2067/068	25741.00	24030.00	618556230.00	577440900.00	24261.90
7	2068/069	30385.00	31017.00	942451545.00	962054289.00	31626.10
Summation		126506.00	127102.00	2625715307.00	2619701068.00	126506.00

e	e^2	y	y^2	$\hat{y}$	$\hat{y}^2$
-1349.84	1822080.43	-8710.29	75869077.22	-7360.44	54176093.47
-639.75	409285.30	-7006.29	49088039.51	-6366.53	40532724.90
1170.73	1370612.84	-3936.29	15494345.22	-5107.02	26081627.41
329.38	108491.40	-1393.29	1941245.08	-1722.67	2967578.30
251.49	63246.33	1064.71	1133616.51	813.23	661336.62
1479.10	2187742.33	7668.71	58809178.80	6189.61	38311301.90
-1241.10	1540337.88	12312.71	151602933.08	13553.82	183705976.33
0.00	7501796.50	0.00	353938435.43	0.00	346436638.92

(Source: NNFL Annual Reports)

From Table 4.12, the estimated regression line Y on X,

$Y_c/\hat{Y}$ = -1065.40 + 1.05399X

$F^* = \frac{\sum \hat{y}^2/(K-1)}{\sum e^2/(n-K)}$ or, $F^* = \frac{346436638.92/(2-1)}{7501796.50/(7-2)}$ $\therefore$ F^*= 230.90245

At 5 percentage level of significance the critical value of F statistic with ν_1(nu one-degree of freedom at numerator i. e. 1) and ν_2(nu two-degree of freedom at denominator i. e. 5) is 6.61

Here, calculated F > critical F(or tabulated F), so H_0 is rejected and H_1 is accepted. In other words the estimated regression line of loan on deposit is significant. Hence it can be said that there is positive correlation between loan disbursement and deposit collection.

The processes for testing the significance of regression line of net profit on deposit are as follows.

I) Hypothesis Setting

Null Hypothesis (H_0) : The regression line is not significant.

Or, H_0: b=0 that is Y does not depend upon X, so not significant.

Alternative Hypothesis (H_1) : The regression line is significant.

Or, H_1: b≠0 that is Y depends upon X, so significant.

II) ANOVA Table

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square Error	F Ratio F^*
(Between Samples) Explained	$\sum\hat{y}^2$	K-1	$\sum\hat{y}^2$/(K-1)	$\frac{\sum\hat{y}^2/(K-1)}{\sum e^2/(n-K)}$
(Within Samples) Unexplained	$\sum e^2$	n-K	$\sum e^2$/(n-K)	
Total	$\sum y^2$	n-1		

Where, n(Number of pair of observations)=7, K(Number of Parameters)=2, and

$\hat{y} = \hat{Y} - \overline{Y}$, $\overline{Y} = \frac{\sum Y}{n}$

Here, we have

ν_1(degree of freedom at numerator) = K-1=1 and

ν_2(degree of freedom at denominator) = n-K=5

Table 4.16

Analysis of Variance (ANOVA) Test of regression line of net profit on deposit

S.N.	Fiscal Year	Net Profit (Y)	Deposit (X)	XY	X^2	$\hat{Y}$
1	2062/063	487.75	11174.00	5450118.50	124858276.00	706.62
2	2063/064	670.25	12117.00	8121419.25	146821689.00	734.26
3	2064/065	637.02	13312.00	8480010.24	177209344.00	769.28
4	2065/066	1150.11	16523.00	19003267.53	273009529.00	863.39
5	2066/067	1144.16	18929.00	21657804.64	358307041.00	933.91
6	2067/068	1254.76	24030.00	30151882.80	577440900.00	1083.41
7	2068/069	1035.00	31017.00	32102595.00	962054289.00	1288.18
Summation		6379.05	127102.00	124967097.96	2619701068.00	6379.05

e	e^2	y	y^2	$\hat{y}$	$\hat{y}^2$
-218.87	47904.30	-423.54	179388.55	-204.67	41890.77
-64.01	4097.05	-241.04	58101.66	-177.03	31341.26
-132.26	17493.14	-274.27	75225.60	-142.01	20167.19
286.72	82208.04	238.82	57033.63	-47.90	2294.63
210.25	44206.62	232.87	54227.11	22.61	511.37
171.35	29361.55	343.47	117969.68	172.12	29623.58
-253.18	64102.58	123.71	15303.46	376.89	142047.60
0.00	289373.30	0.00	557249.68	0.00	267876.38

(Source: NNFL Annual Reports)

From Table 4.13, the estimated regression line Y on X,

$Y_c/\hat{Y}$ = 379.1297 + 0.02931X

$$F^* = \frac{\sum \hat{y}^2/(K-1)}{\sum e^2/(n-K)} \quad \text{or, } F^* = \frac{267876.38/(2-1)}{289373.30/(7-2)} \quad \therefore \ F^* = 4.6285$$

At 5 percentage level of significance the critical value of F statistic with ν_1(nu one)=K-1=2-1=1(degree of freedom at numerator) and ν_2(nu two) = n-K =7-2 = 5(degree of freedom at denominator) is 6.61

Here, calculated F < critical F (or tabulated F), so H_0 is accepted and H_1 is rejected. In other words the estimated regression line of net profit on deposit is not significant.

The processes for testing the significance of regression line of net profit on loan are as follows.

I) Hypothesis Setting

Null Hypothesis (H_0) : The regression line is not significant.

Or, H_0: b=0 that is Y does not depend upon X, so not significant.

Alternative Hypothesis (H_1) : The regression line is significant.

Or, H_1: b≠0 that is Y depends upon X, so significant.

II) ANOVA Table

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square Error	F Ratio F^*
(Between Samples) Explained	$\sum\hat{y}^2$	K-1	$\sum\hat{y}^2$/(K-1)	$\frac{\sum\hat{y}^2/(K-1)}{\sum e^2/(n-K)}$
(Within Samples) Unexplained	$\sum e^2$	n-K	$\sum e^2$/(n-K)	
Total	$\sum y^2$	n-1		

Where, n(Number of pair of observations)=7, K(Number of Parameters)=2, and

$\hat{y} = \hat{Y} - \overline{Y}$, $\overline{Y} = \frac{\sum Y}{n}$

Here, we have

ν_1(degree of freedom at numerator) = K-1=1 and

ν_2(degree of freedom at denominator) = n-K=5

Table 4.17

Analysis of Variance (ANOVA) Test of regression line of net profit on loan

S.N.	Fiscal Year	Net Profit (Y)	Loan (X)	XY	X^2	$\hat{Y}$
1	2062/063	487.75	9362.00	4566315.50	87647044.00	652.16
2	2063/064	670.25	11066.00	7416986.50	122456356.00	702.85
3	2064/065	637.02	14136.00	9004914.72	199826496.00	794.19
4	2065/066	1150.11	16679.00	19182684.69	278189041.00	869.84
5	2066/067	1144.16	19137.00	21895789.92	366224769.00	942.97
6	2067/068	1254.76	25741.00	32298777.16	662599081.00	1139.44
7	2068/069	1035.00	30385.00	31448475.00	923248225.00	1277.61
Summation		6379.05	126506.00	125813943.49	2640191012.00	6379.05

e	e^2	y	y^2	$\hat{y}$	$\hat{y}^2$
-164.41	27029.15	-423.54	179388.55	-259.14	67152.20
-32.60	1062.81	-241.04	58101.66	-208.44	43448.14
-157.17	24700.98	-274.27	75225.60	-117.11	13714.14
280.27	78550.39	238.82	57033.63	-41.45	1718.21
201.19	40477.86	232.87	54227.11	31.68	1003.37
115.32	13298.07	343.47	117969.68	228.15	52052.38
-242.61	58857.27	123.71	15303.46	366.31	134184.72
0.00	243976.52	0.00	557249.68	0.00	313273.16

(Source: NNFL Annual Reports)

From Table 4.14, the estimated regression line Y on X,

$Y_c/\hat{Y}$ = 373.6290+ 0.02975X

$F^* = \frac{\sum \hat{y}^2/(K-1)}{\sum e^2/(n-K)}$ or, $F^* = \frac{313273.16/(2-1)}{243976.52/(7-2)}$ $\therefore$ F^*= 6.4201

At 5 percentage level of significance the critical value of F statistic with ν_1(nu one-degree of freedom at numerator i. e. 1) and ν_2(nu two-degree of freedom at denominator i. e. 5) is 6.61

Here, calculated F < critical F (or tabulated F), so H_0 is accepted and H_1 is rejected. In other words the estimated regression line of net profit on loan is not significant.

4.3 Major Findings of the Study

The major findings of the financial or accounting investigation and statistical analysis are as follows.

(i) Credit deposit ratio less than unity in the last financial year, paid up capital of Rs.64,74,84,500/= and reserve fund of Rs.28.94 crores show the liquidity strength of NNFL is robust enough to be a reliable finance company.

(ii) The net profit to total deposit ratio is volatile before merging. Net profit to total deposit ratios after merging in the FY 2066/067, 2067/068 and 2068/69 are 6.04, 5.22 and 3.34 respectively. The declining net profit to total deposit ratio after merging shows that the utilization of deposit in NNFL is decreasing.

(iii) The return on investment ratio is unstable before merging. Return on investment ratios after merging in the FY 2066/067, 2067/068 and 2068/69 are 5.98, 4.87 and 3.41 respectively. Therefore, after the merging, the diminishing return on investment ratio shows that the benefit and efficiency of NNFL on its investment is falling down.

(iv) The arithmetic mean of deposit, loan and net profit are 18157.43, 18072.29 and 911.29 respectively.

(v) The standard deviation of deposit, loan and net profit are 6674.64, 7110.74 and 282.15 respectively. Therefore, there is a high degree of homogeneity of distribution of net profit than the distribution of loan and deposit. Similarly there is a low degree of consistency of the distribution of loan than the distribution of net profit and deposit. The distribution of deposit is more homogeneous than loan but more heterogeneous than net profit.

(vi) Coefficients of variation of deposit, loan and net profit are obtained 36.76, 39.35 and 30.96 respectively. Therefore the distribution of net profit is less variable or more homogeneous or more consistent than deposit and loan. Similarly loan is less uniform or less stable or less stationary or less

equitable than net profit and deposit. The distribution of deposit is more smooth than loan but less homogeneous than net profit.

(vii) The correlation coefficient between deposit and loan is 0.9893456 and the coefficient of determination is 0.9788048. It shows that there is 97.88% effect of deposit collection on loan disbursement. It means that deposit and loan are highly related to each other. The probable error of coefficient of correlation between deposit and loan is 0.005403. The six times of probable error is 0.03242065. Hence the coefficient of correlation is more than six times of its probable error. Thus the coefficient of correlation between deposit and loan is definitely significant.

(viii) The coefficient of correlation between deposit and net profit is 0.693333682 and coefficient of determination is 0.480711595. This indicates that 48.07% variation in net profit is due to deposit collection. The probable error of coefficient of correlation between deposit and net profit is 0.132385847 and six times of it is 0.794315085. Therefore coefficient of correlation is less than six times of its probable error. Hence it is not definitely significant. But still there is positive correlation between deposit and net profit.

(ix) The coefficient of correlation and coefficient of determination between loan and net profit are 0.74978488 and 0.56217737 respectively. The probable error of coefficient of correlation and six times of it are 0.111617205 and 0.669703231 respectively. Therefore the coefficient of correlation between loan and net profit is definitely significant because it is more than six times of its probable error. It can be said that 56.21% variation in net profit is due to loan disbursement.

(x) Standard error of the regression line loan(Y) on deposit(X), $S_{y.x}$ is 1224.892 and standard deviation of loan (σ_Y) is 7110.74. Hence the scatter about the regression line of loan on deposit is approximately one-sixth as great as the scatter about the arithmetic mean.

(xi) Standard error of the regression line of net profit (Y) on deposit(X), $S_{y.x}$ is 240.5715 and standard deviation of net profit (σ_Y) is 282.15. Hence the scatter about the regression line of net profit on deposit is approximately seventeen-twentieth as great as the scatter about the arithmetic mean.

(xii) Standard error of the regression line of net profit (Y) on loan(X), $S_{y.x}$ is 220.8965 and standard deviation of net profit (σ_Y) is 282.15. Hence the scatter about the regression line of net profit on loan is approximately thirty nine-fiftieth as great as the scatter about the arithmetic mean.

(xiii) Analyzing the regression analysis, ANOVA test and test of hypothesis it is discovered that the regression line of loan on deposit is significant. The estimated regression line of net profit on deposit is not significant. Similarly the estimated regression line of net profit on loan is not significant.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The gist of the research study, conclusions and corresponding recommendations are enlisted below which are valuable for the clients (depositors and loanees), new researchers and the institution as well.

5.1 Summary

People save the amount out of their income by postponing the consumption. Similarly an organization can save the amount by creating retain earning. Hence saving is accumulated by the hard work and abandonment of present consumption. Everyone saves the amount for future necessities such as health expenses, education expenditure, old age consumption and other casual overheads. Such saving amount is deposited in bank account which is known as deposit. Therefore the banks or financial institutions should be able to utilize the accumulated mobilized fund properly which is earned from hard work and sweat of the people.

The banks and financial institutions generate their income by disbursing the collected amount to the suitable persons or institutions in short term or in long term loans. The banks and financial institutions are operated under the monitoring and supervision of NRB in accordance with the BAFIA so there is less possibilities of exploitation of the clients compared to the loan disbursement from the unorganized sector where people are paying more than 36% interest rate in borrowing.

Therefore, well managed and monitored banking system is beneficial to the depositors and loanees as well. The lack of duly supervised and thoroughly handled banking system all over the county is the main factor affecting lending money from unorganized sector and deposit collection in unorganized sector. It

is very easy, convenient, economical and reliable to deposit the earning amount in banks and financial institutions by filling up some necessary documents. Similarly it is really straightforward to get loans from the banks and financial institutions by submitting collateral valuation report and other mandatory documents in cheaper rate and repayment schedule facilities as desired monthly, bi-monthly, quarterly, half yearly, yearly or in any other intervals. Nowadays the banks and financial institutions of Nepal are providing remittance facilities within the country and abroad besides deposit collection and lending. So, healthy and well managed money market is necessary for creating banking habits, resource mobilization and overall economic development of the country.

Deposit collection and lending procedures, function of banks and financial institutions in resource mobilization, advantages of good banking habits in deposit and lending and auditing aspects of the banking system is discussed in detail as far as possible. Ignorance of the banking system is the main problem of backwardness of our society. Therefore, it is anticipated that this thesis study would be helpful to understand the role and importance of the banking system for individual persons, institutions, communities, societies, and the entire country. It is equally important to select the strong and reliable bank or financial institution for depositing the earning of the entire life for future purposes. Hence some indicators of measuring the strength and reliability of banks and financial institutions are discussed in details as far as possible. The combined status of Narayani Finance Limited and National Finance Limited before merging is discussed of four financial years. After that the new status of the institution NNFL after merging is discussed describing the data of three fiscal years to search the strength and weakness of the institution for assuring the security of deposit of the people.

This research study aimed at analyzing the deposit collection, loan disbursement and net profit of NNFL with the help of credit deposit ratio, net profit to total deposit ratio, return on investment ratio, correlation and regression estimation between these amounts. It was hypothesized that there

would be positive correlation between loan disbursement and deposit collection, net profit and deposit and net profit and loan. Similarly it was also hypothesized that the regression lines of loan disbursement on deposit collection, net profit on deposit and net profit on loan would be definitely significant. The research study was also targeted to give the benefit of banking habits for the depositors and loanees for running the financial system of the whole economy smoothly. Hence all the necessary information of operating deposit accounts and the lending procedures are explained in details as far as possible.

5.2 Conclusions

The growth of loan disbursement and deposit collection are satisfactory in Narayani National Finance Limited. Smooth and sustainable growth of deposit and loan was observed during this dissertation study. The credit deposit ratio more than unity shows the high demand of loan in the financial market that was fulfilled by NNFL. Credit deposit ratio less than unity in the last financial year is indicating that NNFL is strong at liquidity position. The decreasing net profit to total deposit ratio shows the utilization of deposit in NNFL is reducing after merging. The diminishing return on investment ratio shows that the benefit and efficiency of NNFL on its investment are also declining after the merging.

The standard deviation of loan is highest among deposit, loan and net profit. Standard deviation of net profit is lowest among them. Therefore, there is a high degree of uniformity of the distribution as well as homogeneity of the series of net profit than the series of loan and deposit. Similarly there is a low degree of uniformity of the distribution as well as high heterogeneity of the series of loan than the series of net profit and deposit. The distribution of deposit is more homogeneous than loan but more heterogeneous than net profit. The coefficient of variation of loan is highest among these three variables. The lowest coefficient of variation is obtained of net profit. Therefore net profit is less variable or more homogeneous or more consistent or more uniform or more stable or more stationary or more equitable than deposit and loan.

Similarly loan is more variable or more heterogeneous or less consistent or less uniform or less stable or less stationary or less equitable than net profit and deposit. The distribution of deposit is more homogeneous than loan but more heterogeneous than net profit. There is positive and definitely significant correlation between loan and deposit in NNFL. The correlation between the net profit and loan is also found to be positive and definitely significant. But the correlation between the net profit and deposit collection is not definitely significant, still the correlation is positive. Thus it can be concluded that loan and deposit are highly correlated, similarly the net profit and loan are also extremely interrelated. The scatter about the regression line of loan on deposit is approximately one-sixth as great as the scatter about the arithmetic mean. The scatter about the regression line of net profit on deposit is approximately seventeen-twentieth as great as the scatter about the arithmetic mean. The scatter about the regression line of net profit on loan is approximately thirty nine-fiftieth as great as the scatter about the arithmetic mean. By the test of hypothesis and ANOVA test it is observed that regression line of loan on deposit is significant. It means that as deposit collection increases it affects the corresponding increment in the loan disbursement. The estimated regression line of net profit on deposit and the projected regression line of net profit on loan both are not significant by the conclusion of hypothesis testing.

Therefore, it can be concluded that the deposit collection and loan management are reasonable in NNFL but still the growth of net profit is not satisfactory as desired. The growth line of net profit is volatile and not smoothly growing. Thus it can be said that the deposit of the depositors is safe in NNFL but the earning of the shareholders is declining.

5.3 Recommendations

Nevertheless the researcher is almost satisfied with the performance of NNFL; the following suggestions are expected to be precious for the institution for sustainable growth and development.

1) Small scale depositors and loanees should be encouraged for saving and loan disbursement respectively for the full-fledged economic development of the country.
2) Only the people of urban areas are utilizing the services of NNFL and the rural people are fully exploited by private money lender until now, so it would be great contribution of NNFL in the development of the country if it expands its markets in the rural areas.
3) The ongoing plan and process of NNFL to be converted into a national level development bank after merging is welcomed heartily. It must expand its services all over the country as far as possible.
4) NNFL should search other profit motive financial services besides loan disbursement and remittance for the sustainable net profit growth and institutional development.

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APPENDICES

Appendix – I

Deposit, Loan and Net Profit of NNFL

S.N.	Fiscal Year	Deposit	Loan	Net Profit
1	2062/063	11,174.00	9,362.00	487.75
2	2063/064	12,117.00	11,066.00	670.25
3	2064/065	13,312.00	14,136.00	637.02
4	2065/066	16,523.00	16,679.00	1,150.11
5	2066/067	18,929.00	19,137.00	1,144.16
6	2067/068	24,030.00	25,741.00	1,254.76
7	2068/069	31,017.00	30,385.00	1,035.00

(Source: NNFL Annual Reports)

Appendix – II

Mean, Standard Deviation and Coefficient of Variation of Deposit, Loan and Net Profit

S.no.	Deposit	Loan	Net Profit
Mean($\bar{X}$)	18157.43	18072.29	911.29
Standard Deviation(σ_X)	6674.64	7110.74	282.15
Coefficient of Variation(C.V.)	36.76	39.35	30.96

(Source: NNFL Annual Reports)

Credit Deposit Ratio, Net Profit to Total Deposit Ratio and Return on Investment Ratio of NNFL

S. N.	Fiscal Year	Deposit	Loan	Net Profit	Credit Deposit Ratio	Net Profit to Total Deposit Ratio	Return On Investment Ratio
1	2062/063	11,174.00	9,362.00	487.75	0.84	4.37	5.21
2	2063/064	12,117.00	11,066.00	670.25	0.91	5.53	6.06
3	2064/065	13,312.00	14,136.00	637.02	1.06	4.79	4.51
4	2065/066	16,523.00	16,679.00	1,150.11	1.01	6.96	6.90
5	2066/067	18,929.00	19,137.00	1,144.16	1.01	6.04	5.98
6	2067/068	24,030.00	25,741.00	1,254.76	1.07	5.22	4.87
7	2068/069	31,017.00	30,385.00	1,035.00	0.98	3.34	3.41

(Source: NNFL Annual Reports)