CHAPTER 1

INTRODUCTION

1.1 General Background

Nepal is a land-locked country enriched by biodiversities and highly diverse topographies. This is but to be expected in a country just rising from barley 67 meters above sea level all the way to the highest peak of the world Mount Everest. Nepal is located in between longitudes 80"4 to 88"12 East and latitude 26"22 to 30"27 North. It covers the area of 147,181 s q. km. The country is almost rectangular in shape with its 120 to 140 km width and nearly 900 km length. The country is wedged between the two Asian giants of China in the north and other three directions by India. Politically, Nepal can be divided into five development regions from the East to the West. Although these divisions mainly to do with altitude, they are equally different in the physical terrain as well. Physiographic ally, it is divided between three regions: Upper-Mountains Lower-Terai and Middle-Hills.

Kathmandu is the capital city of Nepal. It is political, commercial and cultural hub of the country. The history of the valley begins with Buddhist saint Manjushree who slashed a passage through the surrounding hills to drain out the primordial water and made it inhabited. Over the century, a refined urban civilization emerged, built on a unique synthesis of Hinduism and Buddhism dynasty came and went. In the late 18th century following the founding of modern Nepal more or less the present boundaries, kathmandu was made the capital.

Physiographically, the country is divided in three regions: Mountain, Hill and Terai accommodating 7%, 44% and 49% of population respectively. Based on the districts, these regions constituted 35%, 42% and 23% of the total land area. There are 5 development regions and 75 administrative districts are further divided into smaller units called Municipalities and Village Developments Committees (VDC). Nepal is an agrarian country. Most of the people in Nepal depended on agriculture for their livelihood. Agriculture had been solely responsible for countries economic development for decades. With the advent of Biratnagar Jute Mills, Nepal's industrial development begins to grow. At present, there are numerous industries in the country contributing to the nation's economic development. Some of the industries are based on local raw materials such as tea leaves, food, carpet, brick etc. industries, where many industries import raw materials for the production process. Industrial and agricultural growth has not taken place as expected. Hence, "Nepal has remained as one of the poorest countries in the world with around 240 us $ per capita income." This can be attributable to inefficient use of the resources in both sectors i.e. agriculture and industry. Nepal is enriched in forest and water resource. In water resource, Nepal can generate 83,000 Megawatts electricity. "The potential production capacity is estimated in the koshi River 22,000 Megawatt. Similarly, the Gandaki and Karnali potential capacity is 21,000 and 23,000 Megawatt respectively. The rest capacity can produce from other rivers."[2] In the

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[1]the world Bank, 2001 "World Development," Washington DC oxford university Press, Page No. 275.

[2]K.C., Tank "Civil Aviation," Vidyarthi Pustak Bhandar, Kathmandu, Nepal, 2003

Contents of Nepal, the first electricity project was held in Nepal on 1911 A.D. The project was established with the aid of England Government

1.2 What is a Public Enterprise?

Different types of organizations provide different services to their customers. Some are manufacturing firms and some are service-oriented organizations. Mainly customers get services from private sector and public sector. A public enterprise is owned and managed by the government. It provides goods or services for a price. Public enterprise has a significant role in almost every country of its own. The term 'public Enterprise' has been defined differently by different agencies and governments to suit their own respective situation. "Public enterprises play a major role in achieving the twin objectives of social and economic development envisaged in the nation policy."[3] The role of public enterprise in stimulating and augmenting the pace of economic growth in developing countries can be under estimated.

"Public enterprise plays a very important role in most of development countries. The role of public enterprise differs from country to country, basically due to political of existing governments. Public enterprise comes in to existence either by nationalizing them from private sector. When we see the history of PE, we find that most of them well created by the government themselves to manage certain key sectors of the economy."[4]

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[3]Accountabillity & Control of PEs "Asian Org. Supreme Audit Institution (ASOSAI) P.153

[4]B.D.R. Joshi, 1989 "The Journal of public Administration.

1.3 Public Enterprises in Nepal

Public enterprise in Nepal constitutes a vital instrument for the socio-economy development of the country. It enjoys a strategic and crucial position in our mixed economy. Public enterprises (PEs) have been established in many sectors for the overall development of the country with different goals and objectives. "Nepal Bank Limited (1996), a commercial bank was the first PE to have separate legal status in Nepal."[5] During the world war 2nd , some other PEs were established. However, they could not make substantial progress.

Nepal started its planned economic development in 1956 with the launching of first five year plan. Since then, the number of PEs has increased substantially in various fields of the nationally economy. There were 64 PEs before the privatization program of Nepal Government and now, there are 43 PEs. The PEs are dominant in the production of sugar, cement, cigarettes, agriculture tools, petroleum products and all public utilities. Public enterprise of Nepal can be categories as follows:-

Statutory corporation

Government companies

Departmental undertakings

Among 43 existing PEs, there public utility PEs namely

⌡ Nepal Telecom Ltd.

⌡ Nepal Water supply corporation

[5]Accountabillity & Control of PE, Op. Cit. P. 153.

1.4 Historical Background of Nepal Electricity Authority

Nepal has predominantly an agricultural economy and about 90 percent of the economically active population is engaged in agriculture. Still 91 percent of energy of the country is met by the traditional energy sources such as fuel, wood, agri-residue and animal dung. Though the total area covered by the national grid system of the country reached 33 percent so far only 15 percent out of the 23.4 million populations has access to electricity. NEA, established little over two decades ago, has been enriched with the mixed experiences of being a successful PE.

NEA was built in 1911 at Pharping. Since then, the development of power projects were under taken by agencies called the **Bijuli Adda** (Department of Electricity) depending upon the prevailing name of the H.M.G. Nepal institution responsible for building power project in Nepal. Presently NEA and the department of electricity development are engaged in the development of power project in Nepal in the government sector. In 2031 B.S. a separate electricity called eastern zonal electricity supply to the eastern part of Nepal. In 2039 B.S. however, Nepal Electricity Corporation and eastern zonal electricity corporation were merged into a single organization. These different types of organizations working on the some service naturally entailed two-way expenditures and impediment was felt in handling administrative work. Thus, gradually the need fro a unified organization started to be felt which could supply and distribute electricity service without much administrative hindrance. To this effect, Nepal electricity authority Act

2041was brought forward and put into effect from Bhadra 1, 2042 B.S. According to new NEA Act 2041, all former division and committees concerning electricity production and supply and distribution were amalgamated into Nepal electricity authority. Later on, Marshyangdi electricity centre was also handed over to Nepal electricity authority after the completion of its construction work. More specifically, the objectives for establishing Nepal electricity Authority can bi traced as follows:

⟩ To establish a single organization that would work in all sectors of electricity planning, production, operating, maintenance and distribution of electricity.

⟩ To utilize and develop the huge amount of water resources of Nepal in more coordinated way.

⟩ To provide equal and extensive skill development opportunities for all employees working in the field of electricity.

⟩ To overcome the duplication of work being practiced formerly by the existence of several electricity agencies.

The demand for electricity in Nepal both for domestic and industrial consumption is rapidly increasing. In order to meet the increasing demand, NEA has attempted to fix long-term, mid-term and short-term plans. The short-term plans are identified as medium size hydro electricity (5-50mw) such as Bhote Koshi, Modikhola, Puwakhola and Khimti project along with thermal generation with their relatively short gestation period and peaking capabilities. Participation of private sector is also identified as catalyst in the

Attainment of these goals and has been encouraged by government favorable acts and electricity acts.

The mid term option has been identified as Hydro Power generation such as Kali Gandaki. This is the semi-government instution. The board of the directors is committed to establish by the government. That committee operates those activities which are held in the institution. There are eight members in the board including the minister for water resource. The Head Office of the NEA is at Durbarmarga, Kathmnadu.

Mainly, NEA has three sectors namely

⟩ Generation

⟩ Transmission

⟩ Distribution

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    │  GENERATION   │→ │ TRANSMISSION  │→ │ DISTRIBUTION  │
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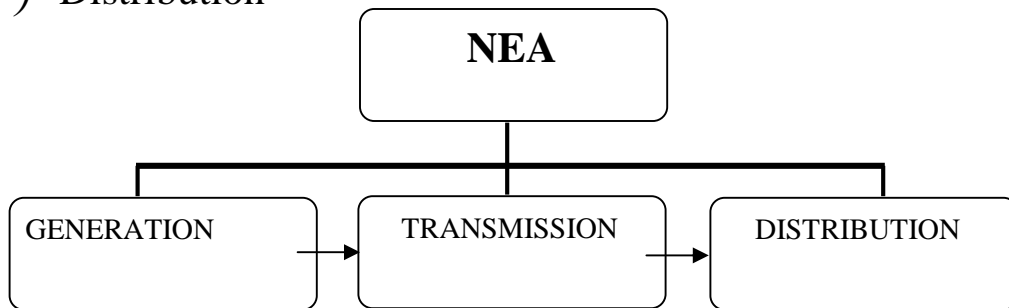
The main purpose of generation is to generate electricity by using water resource for that purpose NEA has built several powerhouses. After the generation of electricity, the main task of transmission is to connect that power to national grid line.

The last stage is the distribution of power which is received by grid (substation) and distributes the power to the consumer's house and collects its revenue. The population census-2001 report that the population having access to electricity service had reached 40% with 33% of the population availing the service from the grid and NEA off-grid facilities, the remaining 7% being attributed to micro

hydro plants developed by local entrepreneurs and others alternate sources. The tenth plan aims at Increasing electricity services from 33% to 43% of the population through the Grid and NEA owned off-grid power generation facilities. Considering the above, NEA is channeling effort and resources for the enlistment of its distribution capabilities and expansion of lines in the rural areas. A feasibility study has already been carried out for rural electrification and distribution system reinforcement covering 47 districts. With the help of JICA, NEA is hydropower projects with the objective of integrated development of remote hilly areas through rural electrification. The scope of the NEA is very wide. For the sufficient service to the consumer of NEA it has established different branches overall the country. Various branches of NEA are spreading all over the country having particular aim.

1.5 An introduction of NEA, Jhapa Distribution Centre

We have already known that NEA has three sectors. Among those sectors, the very most important sector of NEA is distribution sector. We can say that it is the back bone of NEA. All the performances are calculated on the basic of distribution sector. Distribution sector is the most vital segment of an electricity utility system. The final success of the utility organization is reflected through the standard of prompt services provided by the distribution sector to its consumers. The efficiency of the institution is assessed through its economy performance standards. The distribution sector holds major areas of its economic activities, the utility organizations, distribution sector must devote its full efforts towards prompt revenue collection system, effective system losses reduction programs, restricted use of materials for operation and

Maintenance purpose and implementation of cost effective system expansion programs. The distribution managers are required to work with a profit center concept for achieving better economic results of the institution by maintaining proper standards of services to its clients. By the concept of distribution center NEA, Jhapa Branch became NEA Jhapa branch was fully operate by central management after the published of distribution center act 2060 the branch has get some rights and authority.

Nepal Electricity Authority, Jhapa Distribution Centre is one of the small distribution center of Nepal Electricity Authority. It is located approximately 75 Km east of Biratnagar. Since the establishment of this branch, it is serving its customers.

In the beginning the branch provided its service to about 8,000 consumers but currently it is dealing with about 107,000 consumers. It shows the electrification in the district is in the increasing trend. By the electrification map it shows that the branch is successful to spread the electricity to 41% of the total area of Jhapa districts. So the demand for electricity both for domestic and industrial consumption is rapidly increasing. In order to provide sufficient services to the consumptions, Jhapa Branch has operating its 13 sub branch has some particular aims and tasks.

⟩ Reduction of system losses to a reasonable limit.

⟩ Increase of sales for achieving higher rate of revenue collection.

⟩ Implementation of cost effective system expansion scheme for increasing number of consumer.

⟩ Reduction of operation and maintenance cost.

Beside these aims, it is very difficult for the branch for the branch to operate its works, because of the political obstacles, consumer's behavior, etc.

1.6 Statement of the problem

Nepal is one of the least developed countries and it has poor economy. Due to its economic conditions and from other causes private sector as well as public sector is not successful to obtain its goal. Mainly some public sector organizations are suffering from the financial problem because of inefficiency, poor performance, political situation and geographic situation. So, there is a requirement of good performance. Lower performance will affect the economic condition of country and the organizations also.

Electricity is one of the basic infrastructures for the industrial development of the nation. Without electricity, industrialization cannot be imagined. In this context NEA has a great role to play for them. For PEs it has no difficulty in selling its products and services as demand of electricity in the nation exceeds supply many times. It has been facing or no market competition, enjoying almost full monopoly over the distribution, of service. Despite these facts, the performance of NEA has remained unsatisfactory and quite poor. NEA, Jhapa Distribution to our country. So, this branch is considered as back bone of Jhapa District.

The branch is facing different problems due to the political situations of the country. Now a day, the performance of this branch is in decreasing trend and cannot able to grab opportunities. This research about

Relationship between sales and revenue collection of Jhapa Branch will focus and provides clear vision regarding financial problem, strategic implementation & factful plan of the NEA Jhapa.

This study is confine to the problem of financial operation & management of NEA, Jhapa Branch. As observation of financial performance in NEA, Jhapa dose not seem to be satisfactory & encouraging through it has monopoly rights to the power sector the district.

Some problems & obstacles of the branch:

While operating different tasks NEA has to face many problems. It has to deal with different sector of society. Some problems and obstacles are stated below.

❖ **Political Obstacles**

NEA is a semi government institution. It has its own image. It should not be forced by out power. Some decisions are directly enforced by the politicians who are very harmful to the branch.

❖ **Lack of well Management**

Some problems and obstacles created in NEA, Jhapa are due to the poor management. If the management is not well it could not decide any right decision there will be a vast gap between communication of top level management and lower level management.

❖ **Leakage of Electricity**

Leakage of electricity is also the problem of NEA. By this the profit of NEA goes in that leakage. So the institution couldn't earn pre-acquired profit. There are not solid plan, rules and regulation in the case of leakage therefore electricity of Jhapa is leaking continuously.

❖ **Consumers Behavior**

Behavior of the consumers effects the decision of NEA. Some consumers are polite and gentle and some are very difficult to tackle. Those consumers create different in branch.

❖ **Level of Budget**

The consumer of the branch is in the increasing trend i.e.: Level of work is also is increasing but sources are very limit to cover whole expenses.

❖ **Lack of efficient man power**

Lack of efficient man power effect all performance of the branch. About Rs.12,00,000,00 is a debtor to recover of the branch but the management is unable to recover the amount because of the lose plans, rules and regulations.

The present study attempts to have an insight over the problem of financial management of NEA, Jhapa. This study also attempts to recommend some Concrete for improvement in overall financial performance through financial analysis.

1.7 significance of the study

Financial performance decision is a significant managerial decision. Over the past 21 years the branch has covered 41% of the district, in the way it has to face many problems. The major problem of the branch is to collect its revenue. This research focuses the comparative study of sales and revenue collection of NEA, Jhapa how does this relation affect the branch's output? Study made on NEA, Jhapa analyzes the financial situation and problems of the branch.

This study properly analyzes the data, provides recommendation of financial affairs, and provides conclusion to the NEA, Jhapa. Most of the data are primary data so the analysis is free from the hypothetical data. It gives pure information which is very significant for decision making. This study seriously the factor that influences the financial performance. It also discusses the relationship between sales and collection of a branch. So it provides the sound financial planning idea, corrective action, useful feedback to the branch and other stakeholders. This study is believed to be an important effort to identify the actual trend of financial position of NEA, Jhapa and is expected to provide some appropriate measure to solve financial problems of the branch.

1.8 objectives of the study

The basic objective of this study is to analyze the relationship between sales and revenue collection of NEA Jhapa Distribution Centre.

The specific Objectives of the study have been the following:

       To analyze the financial performance of the NEA, Jhapa.

       To identify the strengthens and weakness of NEA, Jhapa.

       To find out the challenges and opportunities of the branch.

○ To show the relation between sales, collection and power received.

○ To realize the hiding strengths regarding each and every activities for effective management.

○ To study various important information to the staff, employees or the management.

○ To suggest for the improvement of financial performance of NEA in order to improve financial performance on the basis of findings of this study.

1.9 limitations of the study

A research is a vast study investigating the subject matter for solving perceived research problems. Each and every study has its own limitation. No study can be free from constraints, such as economic resource, time etc. and this study too is not an exception. Therefore some limitations relating to the study are as follows:-

○ In absence of sufficient information, the study will covered only seven fiscal years i.e. from B.S. 2057/2058 to 2063/2064.

○ This study was based on the primary data some where secondary data is also used.

○ Due to the time constraints, not all the related areas have possible to cover in depth.

1.10 organization of the Study

The report of the study has been organized into five chapters each devoted to organized behavior in the context of Nepal. This study has following five chapters. Titles of the chapter are as follows:

1. Introduction:

This chapter is organized as Background, Theoretical Background, Focus of the study, Profile, Statement of the Problem, Objective of the Study, Importance of study and Limitation of the Study.

2. Review of Literature:

This chapter is about related books, Journals, Other publications.

3.Research Methodology:

In this chapter, several tools and techniques are used for analysis and defined properly the presentation of data.

4. Presentation and Analysis of Data:

This chapter consists of tabulation, presentation and analysis of data. It also includes the calculation of financial and statistical tools. Major findings are also included in this chapter.

5. Summary, Conclusion and Recommendations:

This is the last chapter about suggestions to the branch that will help to improve its performance. Bibliography and annexes have been attached at the end of the thesis.

CHAPTER 2
REVIEW OF LITERATURE

2.1 General Background

In this chapter, the review of various books, research studies and articles has been made to make clear about the concept of sales and collection of sales and collection of NEA. Literature review is basically a stock work of available literature. So, it provides required depth of knowledge for conducting research. The purpose of literature review is thus to find out principles are established and research studies have been conducted in the field of study, and what remains to be done.[6]

To make meaningful research study, the conceptual review has been done through the study of various book and articles. In addition, references have been drawn from former researches including Master thesis, dissertation papers, and so on in relation to NEA. So, this chapter "Literature review" has been divided into the following two sections.

A. Conceptual framework.

B. Review of previous study.

For the review purpose, the researcher has undergone conceptual aspects & different relevant pilot works. Therefore, the objectives of this chapter are to provide the essential knowledge of financial performance, financial

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[6]Haward K. Wolf and Prem R. Pant 'Social Science Research and thesis Writing' Buddha Academic Enterprisers Pvt. Ltd. , 2nd Edition, Page-30

Statements and tools of financial statements analysis. Textual support and pilot studies are presented as follows.

2.2 Textual Supports

❖ Financial Statements of sales and collections.

❖ Analysis & Interpretation of sales and collections.

❖ Tools of Financial Statement Analysis.

2.2.1 Financial Statements of Sales & revenue collection:

"Financial statements depict the actual position of a firm in terms of monetary value at a particular point of time. Financial statement such as income statement and balance sheet are the two most important statements that business firms prepare at regular intervals. The basic financial statements prepared for the purpose of repose of reporting in NEA are : (1) Balance sheet or statement of financial position. (2) Profit & Loss account. (3) Statements of sales and collection (4) Loss report etc. These statements are contained in a NEA's annual report. The main internal source of NEA is the amount received through electricity sales that remains with it after deducting the cash expenses. Out of the total amount, provision has to be made for working capital requirement. The balance amount remaining thereafter becomes available for NEA investments. In order to suffice the investments, NEA tariff level should be at a level sufficient to generate sales revenue covering cash operating expenses, working capital requirements, debt servicing as well as financing requirement of the investment program.

One of the strategies to improve its revenue base is to increase its sales volume through utilization of available surplus energy and generate

Additional revenue. Domestic as well as export to potential market for sales of this available surplus energy and generate additional revenue. Domestic as well as export to potential market for sale of this available energy could add to the revenue base. Seasonal tariff is one of the alternatives to promote consumption in domestic market. Accordingly, NEA had made proposal for seasonal tariff in the past, which did not materialize for various reasons. Energy export to Indian market has been considered as the next acceptable alternative for this purpose and therefore, NEA is negotiating with power trading corporation (PTC) of India.

2.2.1.1 Related factors of the comparative study of sales and revenue collection:

- ❖ Electricity Sales
- ❖ Revenue Collection from sales
- ❖ Revenue Collection from other income
- ❖ Electricity Loss Reduction

2.2.1.2 Objectives of Financial Statements:

Financial statements are prepared from the accounting records maintain by the organization. The generally accepted accounting principles and procedures are followed to prepare these statements, as stated earlier, the basic objective of financial statement is to assist in decision-making. The objectives are:

Resources & Obligations: To provide reliable financial information about economic resources and obligation of business enterprises.

<u>Changes in net resources:</u> To provide reliable information about changes in net resources (resources minus obligation) of an enterprises that results from the profit-directed and other activities.

<u>Earnings potential:</u> To provide financial information that assists in estimating the earnings potential of the enterprises.

<u>Full disclosure:</u> To disclose, to the extent possible, other information related to the financial statement that is relevant to statement users.[7]

2.2.2 Financial statement analysis of sales and revenue collection:

The terms financial statements refer to the main two statements-(1) Balance Sheet or Statements of Financial Position (2) Profit and loss account (3) Statement of sales and collection (4) Loss Report etc, which the accountant prepares at the end of the period of time for a corporation. Financial statements provide the summary of the accounts of business enterprises. The balance sheet reflects the assets, liabilities as of certain data. The income statements show the results of the operations during the certain period. The sales and collection statements provide the information about sale, collection, debtors and loss report.

Financial statement analysis refers the indication of proportionate relationship of various components of statement with aggregate figures, proportion within them in the same period and proportional changes from one year to another.

a) **Balance Sheet :**

Balance sheet is important component of financial statement. It is the mirror of the financial position of the firm at a particulars date. Balance sheet is the fundamental accounting report.

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[7]I.M Panday, Financial & Profit Analysis, (8th edition) Vikash Publishing House (P) Ltd. P. 29&30

According to I.M Pandey, Balance sheet contains information about the resources and obligation of a business entity and about its owner, s interest in a business at a particularly point of time. In accounting language balance sheet communicates information about the assets, liabilities and owner, s accounting period. It also indicates the resultant outcome of the firms investment, along with financial and dividend decision.

b) Profit & Loss Account:

Profit & loss account is major statement of financial information. It shows the result of trading and non-trading operation during a period of time. It presents the summary of revenue of revenue earned and costs incurred earning this revenue in a comparative form. The different is the net profit or net loss. In operational terms, the Accounting Report that difference between them for an accounting period is called the income statement. Thus, income statement reflects the efficiency of the efficiency. The income statement occupies a significant place in portraying the result of business operation.

c) Statement of sales and collection

Hear statements of sales and collection means electricity sales and collection in NEA this statement shows the actual position of sales and collection in one fiscal year. IT helps to know what amount of sales and Collection have been made in different tariffs. This statement also helps to calculate the total debtors of a corporation. The main internal source of NEA is the amount received through electricity sales suit has major role in the corporation.

d) **Loss Report**

As well as the sales report of the branch is also very most important factor. It is most important because it the key report of a performance analysis indicator or we can say this report it is the clear image of the branch. It also indicates the received unit of the branch & sales, along with technical loss. Different distribution center are ranked on the basis of loss report in NEA. This report includes receive unit from the substation (Transmission), sales of electricity which is taken by the consumers. The variation between these two factors is profit/loss. Generally the report always shows loss because sales unit will never exceed received unit. The calculation of the performance is based on the margin of loss. So the name of this report is report is loss report.

2.2.2.1 meaning & Purposes of Financial Statement Analysis :

Analyzing financial statement is a process of evaluation relationship between component parts of financial statements to obtain a better understanding of a firm's position and performance.[8]

The financial statement of the business enterprises are initiated to provide much to basic data uses, for decision making and in general evaluation of performance by various groups such as current owners, potential investors creditors, Government agencies and some interested competitors.[9]

Because of various natures in published financial statement used for a wide variety of uses, it is often are particularly interested form the statement. For example, owners and potential investors are normally interested in the present earnings future earnings prospects of business of the similar case may different to the other parties. Thus the detailed analysis and interpretation of financial statement is usually required in order to obtain the information which may be relevant for the specific prospects of particular user.

2.2.2.2 Methods and Procedures of Financial Statement Analysis:

One of the valuable aids we find is the ratio analysis with which a financial manager or a creditor may evaluate how a firm uses different factors may determine how these uses are financed. In addition to studying past flows, the analyst can analyst can evaluate future flows by means of a funds statement based on forecasts. Such a statement provides on efficient methods for the financial manager to assess the growth of the firm and its resulting financial need as well as to determine the best way in which to finance those needs. In particular, funds statements are very useful in planning intermediate and long-term financing.

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[8]R.W Metcalf and P.L. Titard, Principles of Accounting, (Philadelphia) 1976, W.B. Saunders, P.157

[9]James Jet Benjmin opt cit P.412

In The analysis of project funds flow, we have the cash budget is indispensable to the financial manager in determining the short-term cash needs of the firm and, accordingly, in planning its short-term financial. When cash budget is extended to include a range of possible outcomes, the financial manager can evaluate the business risk and liquidity of the firm and plan a realistic margin of safety. This margin of safety might come form adjusting the line of credit with a bank, or a combination of the multiple cash budgets prepared for a range of possible outcome are valuable also in appraising the ability of the firm to pro-forma balance sheets and income statement's enables the financial condition and performance of the firm.

The financial method of analysis involves sustainable growth modeling. Here we determine whether the sales growth objectives of the company are consistent with its operating efficiency and with its financial ratios. This powerful tool of analysis allows us to simulate the likely effects of changes in target ratios when we move form a steady state environment.

The following procedures can be used to analysis the financial statements.

1. Percentages increases and decreases in an item in comparative financial statements.
2. Percentage relationship in an individual component to an aggregate total in a single financial statement.
3. Ratios of one amount to another in the financial statement.

These above mentioned methods can be applied by various ways i.e. horizontal analysis, vertical analysis and common size statement analysis etc.

2.2.3 Tools of financial statement analysis:

1. Ratio analysis:

Ratio analysis has been major tool used in the interpretation and evaluation of financial analysis .The term ratio refers to the numerical quantitative relationship between the two items/variable. A ratio is calculated by dividing one item of the relationship with the other base. In financial performance of the firm. "The analysis of financial ratio involves two types of comparison. First, the present ratio may be compared with the past and expected future ratios for the same company and second, the method of comparison involves comparing the ratios of the one firm with those of similar firm or with industry averages at the same point, in time. Such comparison gives insight into the financial performance of the firm." The Ratio analysis is widely in use. Ratios themselves are not conclusion they are only the mean. The ratios are calculated from data available in the financial statement of an enterprise. The ratio completed from the available data are numerical, there should not be the tendency to regard as a precise Portrayals of a firm true financial status. For some firms, accounting data may closely approximate economic reality, for other, it is necessary to go beyond the figures in order to obtain their financial condition of performance.

Types of Ratio Analysis :

a. Liquidity ratio:1

Liquidity refers to the ability of enterprises to pay its current liabilities. Liquidity implies the utilization of funds of the firm that funds are idle or they are very little. A proper balance between the two contradictory requirements i.e. liquidity and profitability are required for the efficient financial management. The more current assents associates with high liquidity and the low profitability and the less current assets associate with low liquidity and high profitability. Quick ratio is the most widely used ratios for the general purpose to measure the liquidity position of an enterprise.

b. Capital Structure/Leverage Ratio:

The capital structure / leverage ratio is associated with the long-term solvency of an enterprise. The long term creditors would judge the soundness of a firm of the basis of long term financial strength measured in terms of its ability to pay the interest Regularly as well as repay the installment of principal on due dates or in one lump sum at he time of maturity. Leverage ratios show how much of an enterprise's fund are financed by debt and equity his ratios also shows the prospects for future financing.

The capital structure ratio indicates the soundness of capital structure of an enterprise. It can be calculated on two ways. The first approach is to examine what proportion of borrow capital occupies in the capital structure i.e.

calculated on two ways. The first approach is to examine what proportion of borrow capital occupies in the capital structure i.e. examine the number of times the interest earned covered by earnings and to calculate the times fixed charges covered by earnings.

C. Activity Ratio:

An activity ratio may be defined as the test of relationship between sales and various assets of the firm. Depending upon various types of assets there are various types of activity ratios are various types of activity ratios .Activity ratios are employed to evaluate the efficiencies with which the firm manages and utilizes its assets. These ratios are also called turnover ratios because they indicate the speed with which the assets are being covered or turned over into sales. So activity ratios presume that there exists an appropriate relation between sales and various assets. the more important activity ratios for general–purpose analysis are inventory turnover, total assets turnover ratio, fixed assets turnover ratio, capital employed ratio, and etc.

d. Profitability Ratio:

Profitability is very important aspects of management of any enterprise profitability show the overall performance of enterprise. The profitability ratios are calculated to measure the operative effectiveness of the enterprise. Besides management of the company, creditors and owners are interested in the profitability ratios of the firm. Profitability ratios can be calculated on the basis of either sales or investment. The important profitability ratios calculated in relation to sales gross profit margin and operation profit margin. Similarly the important profitability ratios calculated in relation to

Investment, return on shareholders' equity. Return indicates the firm's efficiency of operation. [10]

2. Average:

Average is the sum of all the observations divided by the number of observations Averages is a single value within the range of the data that is use to represent all of the values in the series. Since an average is some where within the range of the data, it is sometimes called a measure of central value? Averages is calculated by the dividing the sum of the observations With Number of observations

3. Correlation coefficient:

Two variables are said to have "correlation '', when they are so related that the change in value of one variable is accompanied by the change in the value of the other. Correlation is a statistical tool which studies the relationship between the two variables. Correlation is the analysis of the co–variation between two or more variable

4. Graphical Approach:

This Is The Simplest And The Easiest Method Of Studying Trend Of Fluctuations. In This Method, Points Are Plotted Taking Time Along X-Axis And The Value Of The Variable Under Study Along Y-Axis. In This Study graphical approach is presented and analyzed by line chart and ber diagram where ever it is necessary. Some Other Special Specified Formats To Show The Performance Of A Branch, Which Are Prepared By He Branch Those Formats, Are Also Included In The Study.

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[10] Pandey, I.M., Financial Management P.133

2.3 Review of Previous Research Studies

Previous studies are reviewed in this section. It consists of thesis and dissertations of previous master's level student as well as other research works related to the sales and collection of NEA jhapa. Analytical studies of an enterprises pertaining to the financial position are essential to know their profit potentiality, operative efficiency and decision making technique .[11]

Some available research studies relating to the financial aspect of PEs in Nepal have been reviewed in this chapter.

In the study, it was found that "the main criteria for providing financial assistance by HMG/N was not based on normal corporate portfolio structure and needs, but on crisis policy of adequate working capital that play instrumental in bringing about A circular consolation of portfolio structure and needs, but on crisis policy of adequate working capital that play instrumental in bringing about a circular consolation of property in many PEs. Absence of sufficient equity cushions had fed to the poor performance of many PEs. PEs capital structure (debt. To equity ratio) did not follow industry's norms, generally, PEs established with foreign assistance had too much equity where as those established by HMG/N were loaded with debt. It was mentioned in the study that, the evaluation of financial results with a view of taking corrective actions, but was hardly attempted. Periodic review of the budget development of internal system and analysis of the generation of fund and its investment, cash and working capital management ware

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[11] Monshar Krishna Shrestha, Financial Management Theory and practice 1980, P.220

generally poorly conducted in the most PEs in Nepal. Often this leads to a situation of the undertakings. It was also pointed out that the financial performance of most of PEs was poor. A Thesis Was Submitted To Institute Of Business Administration, Commerce & Public Administration , T.U .By Mr. Om Krishna Sherstha   On "A Financial Performance Evaluate The Financial Performance Of NEA & to assess the financial position of NEA .The study covered seven years period i.e. from the FY 1970-71 to 1976-77.[12] In this study he found that NEA has highly fluctuating, fund mainly collected through share, loans, and depreciation funds were mainly used in expanding fixed assets and the contribution of NEC to national economy in the form of value added was increasing . He concluded that the net working capital position was not satisfaction. Operation ratio was unsatisfactory due to high operating expenses, the position of funds collection was in heavily fluctuant. The trend was satisfactory mainly from utilization point of views. He also pointed out that the contribution to the national economy in the form of value added was noticeable, Pricing structure had noticeable impact on the profitability was poor & no control measure was in operation at NEC.

A study in the comparatives financial analysis of water supply & Sewerages Corporation & Nepal Electricity Corporation" was conducted by Mr. Purna Prashad shrestha in 1998 with the object of individual & comparative financial analysis of water supply and sewerage corporation (WSSC) and Nepal Electricity Authority to identify the finical weakness and strength of these public Enterprise. It was revealed by the study that the liquidity position of both the enterprises was deteriorating & the liquidity of current

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[12] Om Krishna Shrestha, on "A Financial Perfarmence Evalution study of Nepal Electricity Corporation" (With special reference of financial aspect), Thesis submitted to Insitute of Business Administration, Commerece & Public Administration, T.U. 1997

assets was poor due to excessive inventory holding. The liquidity position of NEA was worse then that of WSSC. The capital structures of both, companies were low geared & NEA enjoyed more favorable position to secure debts than WSSE. The turnover ratio of both enterprises were extremely low, the case in NEA was little better than WSSC. Most of the funds were found spent on the acquisition of fixed assents in case of both enterprises. However NEA spent more funds for this purpose on an average.

Mr. Rabindar Dev Bhatta's research "An Evaluation of Financial position of NEA" in 1997 had the following finding and recommendation.[13]

❖ There is no effective utilization of assets in NEA.

❖ NEA has been seriously facing the problem on the collection of receivable. The accounts receivable in NEA is high. So average collection period is also high in each   fiscal year.

❖ NEA has generated very low returns and in some years negative profitability throughout the study period.

❖ Increasing cost in each fiscal year is an important issue of NEA. It has not adopted the cost control tools and techniques.

❖ NEA is not able to fulfill the requirement of funds from internal sources by successful operation of the corporation's activities. It has been taking considerable amount of loan to fulfill the requirements of funds.

❖ Electricity leakage, theft and wastage have been the major reasons reducing the profit earning capacity of NEA.

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[13] Mr. Rabindra Dev Bhatta " An Evaluation of Financial Position of NEA" Thesis's Submitted to SDC, Faculty of Management, T.U., 1997.

❖ High maintenance expenditure as shown in the profit and loss accounts have been an important factor In reducing the profitability of NEA.

Recommendations of Mr. Bhatta's researches are;

❖ Improvement of the liquidity position.

❖ Management of operating as well as non-operating expenses.

❖ Development of efficient system of revenue collection.

❖ NEA should prepare highly qualified, dynamic and
 Energetic personnel.

❖ Reduce over staffing provide training to staff to increase their productivity.

❖ Immediate action should be taken.

❖ More autonomy should be provided.

❖ Efficient utilization of fixed assets.

❖ Make investment in small projects and avoid big projects without prior feasibility analysis in terms of finance and corporation cost benefits.

❖ The capacity should be fully utilized.

❖ The financial position of the corporation should be timely evaluated.

❖ Improvements in the present Accounting System

 "An analysis of different performance of the branch" was done by the asst. engineer Mr. Sunil Shrestha, Jhapa Distribution centre in F/Y

2063/2064. NEA, Jhapa distribution centre is located approximately 75 Km east of Biratnagar at Jhapa. It was established in 2043 B.S. after

A comparative study on sales and Revenue Collection of Nepal Electricity Authority , Jhapa.

the establishment of the branch it started its operation with 8000 consumers. At present it has approximately 35000 consumers. It employs 128 regular staffs. To provide the sufficient service the branch has established 9 sub branch throughout district. The branch consists of following three main departments.

1. Administration Department
2. Account and Revenue Department
3. technical Department

   Every department has their specific tasks. Without the clear co-ordination between these departments the branch is unable to run its activities. Above 41% area of the district is electrified, because the rural area has not been covered. However the branch has been providing its service to the 41% of the district but the feed back is very low in the preceding 5 year. Due to the political situation of the country the branch is unable to extract information from those places. The main indicator of performance of the branch is revenue collection which is directly affected by the political situation. So from past few years the performance of the branch is not satisfactory. However the branch is handling its duty to an extend it could. The main findings and recommendations of Mr. Sunil Shrestha are as follows:

❖ Target growth rate in sales revenue is nit achieved.

❖ The branch has not adopted the practice of preparing monthly budget, which is required for planning and control.

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❖ While preparing budget suggestions of employees and sub-branches are ignored.

❖ Internal consumption is the account of individual ledger this may helps to reduce the loss of the branch.The demand of the mew consumers is rapidly increasing but the efficient manpower is not enough.

❖ The ledger keeping traditional it may cause variation in control account and individual ledger.

❖ About Rs.10,00,00 debtors are outstanding the branch is not serious in this case.

❖ In total debtors 45% of the amount is due from street light which is increasing by Rs.7,50,000 every month.

❖ It is shown that the amount of the received unit is greater than the sales to the consumers.

❖ Operating costs have not been controlled effectively.

❖ Accounting system is very traditional it should be changed. It caused difficult in reporting.

❖ Level of inventory is very high about 1,25,00,000. It is very harmful to the performance indicator of the branch.

Recommendations of Mr. Sunil Shrestha's research are:

❖ Planners should be properly trained about budgeting and revenue planning.

❖ To achieve target growth rate in sales revenue the branch should make realistic forecasts.

❖ It should start the practice of preparing monthly budget for sales revenue.

❖ The branch should introduce programs and action plans for the reduction of transmission loss, both technical and non-technical, NEA can improve its efficiency in the metering.

Device instantly either by changing old meters or utilizing only efficient meter readers of by improving its Transmission system. N on-technical loss can be reduced by adopting effective managerial, social legal and other measures.

❖ Internal consumption should show in the individual account which helps to reduce the loss.

❖ In the lack of efficient manpower the branch would not able to provide its service so it should starts different trainings to the staffs.

❖ The ledger keeping should be modern it should be computerized.

❖ The branch is not serious in the case of the debtors the amount of total debtors is increasing if the branch is not does not take any action it will be very harmful.

❖ About Rs.7,50,000. Is outstanding in street light the branch should make communications to the stakeholders.

❖ Received unit amount is greater than the sales amount it shows that the branch is in the totally loss it should recognized where is the mistake.

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❖ Operating cost should be reduced it helps to reduced the loss of the branch.

❖ Level of inventory id very high it should reduce.

❖ NEA should put more effort to mange the supply to the profitable sectors such as domestic, industrial, non-commercial, commercial and temporary supply.

❖ Tariff rate for water supply irrigation, temple, Transport service, street light and bulk supply to India should revised in such auditor's way that they could cover operating cost at least.

❖ NEA should try to reduce overdue amount of receivables. NEA should provide incentive to staff to encourage them for collection of overdue amount of receivable. In revenue collection any kind of pressure, nepotism and biases should strictly be discouraged.

❖ An effective cost control program is necessary is NEA.

❖ Price cost volume profit relationship should be considered while formulating the revenue plan.

❖ NEA should have proper coordination regarding budget formulation, implementation and evaluation of achievement.

❖ NEA should try to avoid the load shedding which has created negative attitude towards NEA.

Thus the review of studies clearly pointed out that majority of corporations in our country showed poor performance. The management of PE's does not seem to be satisfactory. In this studies it is also pointed out that the net worth

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is artificially kept low they are in dangerous liquidity position. Sales are inadequate and average investment in capital declined over a period of time. There is less inventory turnover due to high possession of sticks, which is the indicative of inefficient inventory management.The evaluation and analysis of financial results with a view to take corrective actions were handily made. There is much to do in the employment of analytical tools to study many PES to evaluate the financial performance of NEA some one and half decade ago. However, not much attempts were noticed in the recent past. NEA has undergone significantly changes and has become the largest public enterprises in the country in terms of assets, investments and the volume of services provided by it in situation.

CHAPTER- THREE
RESEARCH METHODOLOGY

3.1 Introduction

A systematic research study requires a proper methodology to achieve a set objective. This study has also developed the definite methodologies to achieve a set objective. So, this chapter has been attempted to present a basic frame of methodology with in which the research wick be conducted. Research methodology refers to the various sequential steps along with a rationale, of each such step to be adopted by a researcher in studying a problem with such objective. It would be appropriate to mention that research projects are not susceptible incomplete and inflexible sequence whereas the type of problems to be studied will determine the particular steps to be taken.

Research is a systematic and organized effort to investigate a specific problem that needs solution. This process of investigation involves a series of well activities of gathering, recording analysis and interpreting the data with the purpose of finding answers to the problems.[14]

Research methodology is the way to solve systematically about the research problem. It consists of the research design, the nature & sources of data, tools used, research variables &research questions.

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[14] Howard K. Wolff & Prem Raj Pant "A Handbook For: Social Science Research And Thesis Writing 2nd Edition Page 203

3.2 Research Design

a research design is the arrangement of conditions for collection for collection , & analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure .3.2[15] It is the plan & formulation of investigation idea & strategy so as to obtain answers to research question and to control variance .

Strategy, as used here, is also more specific than plan. In other words, strategy implies how the research objectives will be tackled .[16]The plan is the overall scheme on program of research. It includes an outline of what the investigator will do from writing the hypothesis and their operational implication to the final analysis of data. The structure of the research is more specific. It is the outline, the scheme, and the paradigm of the operation of the variables. When we draw diagrams that outline the variables and their relation and juxtaposition we build structural schemes for accomplishing the operational research purpose, strategy, as used here, is also more specific than plan. The research design of the study is descriptive as well as analytical. This study is an examination and evaluation performance of NEA, Jhapa. The study is closely related with the various indicators revealed from the accounting/revenue statements. In this study, relationship between sales and collection of NEA, Jhapa is based upon the historical financial activities. To define the relation between theses two factors in the main objectives of the study. So, the study is based on certain research designs.

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[15] Claire Setiz and others, " Research Method in social sciences", Revised Edition, 1962, P. 50

[16] Ibid Page 50.

this study emphasizes on descriptive and analytical study of collected data over a period of time (Data are taken from NEA 's balance sheet and income statement and the analysis is basically made on the basis of these 7 years data) and it gives suggestion of the improvement of the branch's performance . So, this study is based on descriptive and analytical research designs.

3.3 Types and sources of data

The main source of data for the purpose of this study is the published financial statement of NEA, Jhapa for the period of last seven years (2057/20858 to 2063/2064). This study is mainly based on the primary as well as secondary data. Such primary data are generated from the branch's different department i.e. distribution center chief, account officer, accountant, store keeper, ledger keeper another staffs of the branch. The study is not only about the branch here comparison between entire NEA's performance and Jahpa distribution centers performance has been made. So data are also taken from several other sources like government report, bulletin another published statements of NEA, its magazines and studies made on this subject.

3.4 Data Collection Procedure

There are several methods of data collection and they generally fall into primary and secondary. According to Solti, Wrights man and cook as quoted by Ritchie (1989), the purpose of the various data collection techniques is to produce truth.

Worthily evidence that is relevant to the research question being asked.

For the purpose of this study, following methods are used:

a) Primary Data: primary data is that data which is generally collected by the investigator or researcher directly by himself /herself. Descriptive analysis is made with the help of primary data. Primary data are collected by Questionnaire and meeting with concern people. To get reliable information discussion was also conducted with staff of Nepal Electricity Authority and other relates parties.

b) Secondary Data: secondary data is the data, which is already collected and used from someone. Secondary data are the data that have been gathered not for the immediate study but for some other purpose. Secondary data can be obtained from either private or public sources. It is colleted indirectly. The advantages of secondary data are low in cost and do not require much time to collect. However it has disadvantages such the data may not fit exactly as per requirement for the research problems as defined in the study.

The secondary data are collected from published from published accounting statements of Nepal Electricity Authority, Report of National planning commission, Central Bureaus of this study is based on textbooks, official publication, journals and previous research studies.

Methods of Analysis

The study has used both descriptive as well as inferential techniques of analysis .Data so obtained

Have no meaning unless they are arranged & presented in a systematic way. Further, they need to be verified & simplified for the purpose of analysis. Moreover, data & information gathered are to be checked, edited and tabulated in such ways that provide convenience for computation and interpretation.

The relevant data have been inserted in meaningful tables. Only the data that are relevant to the study have been presented in the tabular form in the understandable way and unnecessary data have been excluded. To achieve the predetermined objective of the research, certain financial & statistical tools are used.

In order to make an analysis of available data, following methods have been employed.

A. Related data from secondary sources are selected, grouped and tabulated for the purpose of this study.

B. Primary data collected through questionnaire are tabulated and analyzed by using statistical told as well as financial.

C. Tabulated secondary data are analyzed by using ratio analysis. Recommendations were suggested.

Analytical Tools Used

Ratio Analysis :

Ratio analysis is a widely wised tool of financial analysis. Ratio analysis is powerful and important tool and technique of

Financial analysis, which helps in identifying the health of the organization. In other words ratio analysis helps the analyzer make qualitative judgment on the firm's financial position as well as performance. Ratio analysis is a powerful tool for financial analysis. "Ratio refers to the numerical or qualitative relationship between two variables. A ratio is calculated by dividing one item of the relationship with other"[17] . The primary purpose of ratio is to point out areas of further investigation. Ratio analysis uses a major tool in interpretation and evaluation of financial statement.

Ratio analysis stands for the process of determining and presenting the relationship of items and groups of items in the financial statement. According to Van Horn "To evaluate the financial condition and performance of firm, the financial analysis needs certain yardsticks. The yardstick frequency used is a ratio or index relating to pieces of financial data to each other .[18]Ratio is a powerful and important tool and technique of financial analysis, which helps in identifying the financial health of the organization. In other, ratio helps to find out the firm's financial position as well as performance.

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[17] M.Y. Khan & P.K. Jain, financial Management Tara Mc Graw-Hill Publishing Co. Ltd., New Delhi, Reprinting 1990, P. 117

[18] Van Horne J.C. 1998," Financial Management & Policy" 10th Edition, Prentice Hall of India, P. 759

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Ratio may be classified in number of ways keeping in the view the particular purpose. There are different about classification of ratio analysis. According to Van Home "different types of ratios are used in day to day. Generally, for types of ratios namely liquidity, leverage, turnover, and profitability ratios are used in analysis of financial position of a company".

A. Liquidity Ratios:

Liquidity ratios are use to judge firm's ability to meet short-term obligations at its maturity. Liquidity ratio involves the relationship

Between current assets and current liabilities. Two ratios are mainly used to measure the liquidity perditions.

1. Current R
2. Quick ratio/Acid Test Ratio

1. Current Ratio:

Current ratio is the proportion of current asset to current liabilities, which is computed by dividing current assets by current liabilities.

$$\text{Current Assets} = \frac{\text{Current Assets}}{\text{Current liabilities}}$$

Current assets constitute cash and those assets, which can be converted into cash within a year such as marketable securities, account within one year are involved in current liabilities. Higher the current ratio, greater is the probability of timely and full payment of current liability, law ratio indicates that the firm may not be able to pay its current obligations in time.

2. Quick Ratio/Acid Test Ratio

Quick ratio is the proportion of quick assets to current liabilities, which are more accurate measure of liquidity then current ratio quick asset may be defined as current assets mines inventory and it is calculated as under. Investor takes more time to convert cash processing through receivable. Therefore it is excessive quick assets and indicates inefficient management. A low ration is the indicator of difficulties is the timely payment of future bills. Thus the management must be able to maintain.

B. Turnover Ratio:

Turnover ratio indicates the speed with which assets are being converted or turned into sales. These ratios are employed to evaluate the efficiency with which the firm manages and utilizes its assets. Turnover ration involves comparison between high level of sales and investment of various assets account. Following four turnover ratios are used in this study.

i. **Fixed Assets Turnover Ratio.**

ii. **Total Assets Turnover Ratio.**

iii. **Inventory Turnover Ratio.**

iv. **Average Collection Period.**

i.   Fixed assets turnover ratio measures the efficiency with which the firm is utilizing its investment in its net not fixed assets. It is calculated as:

$$\text{Fixed Assets Turnover Ratio} \, X \frac{Sales}{Net \ fixed \ assets}$$

Net fixed assets are defined as gross fixed minus accumulated depreciation. The ratio expresses sales generated rupee of investment is net fixed asset generates the resulted sales. Generally high fixed assets turnover ratio indicates efficient

utilization of fixed assets while inefficiency in utilization in shown by low turnover ratio.

ii.   Total assets turnover ratio:

Total assets turnover ratio indicates the sales generated per rupee of investment in the total assets. This ratio is calculated as under.

$$\text{Total Assets Turnover Ratio} = \frac{Sales}{Total\ Assets}$$

Total assets constitute the fixed assets as well current. Generally higher turnover ratio shows efficiency in utilization of firm's scarce resources and vice versa.

iii.   Inventory turnover ratio:

Inventory turnover ratio is defined as sales divided by inventory:

$$\text{Inventory Turnover ratio} = \frac{Sales}{Inventory}$$

Inventory turnover ratio shows how rapidly the inventory is turning into sales. Generally, high inventory turnover is the indication of good inventory management. But a relatively relation high inventory turnover means low level of inventory which may result frequent stock-out and is costly for the firm.

iv. Average collection period:

The average collection period tells the average number of days that receivables are outstanding, or the average time it takes to convert them into cash. It is computed in two steps:

a) Annual sales are divided by 360 (number of days in a year to find the average daily sales.

b) Outstanding account receivables is divided by daily credit sales to find out the number of days sales tied –up in receivable.

$$\text{Sales per day} = \frac{Sales}{Days\ in\ Years(360)}$$

$$\text{Average collection period} = \frac{Receivable}{Sales\ per\ day}$$

Short average collection period shows timely payment by the debtors but it may suggest an excessive and restrictive credit policy of firm, which may result decrease in sales volume. Long average collection period indicates inefficiency of the firm in the collection of receivables, though it may boost up the volume of sales.

C. Profitability Ratio:

Profitability ratio measures the success of the firm in earning a net return on sales or on investment. These ratios give the decision about how effectively the firm is being managed. Profitability ratio can be classified into following major types.

      i.   Net profit Margin

      ii.   Operating Expenses Ratio

      iii.   Return on Total Assets

i.   Net profit margin:

The net profit margin establishes the relationship between net profit and sales:

$$\text{Net profit margin} = \frac{Net\ profit}{Sales}$$

Net profit here is defined as firm's profit after interest and taxes. The ratio measures the form's ability to change each rupee of sales into net profit. In other

words if the net profit margin is in adequate the firm will fail to achieve satisfactory returns on owner's equity.

ii.   Operating expenses ratio:

Operating expenses ratio the yardstick of operating efficiency, which can be completed by dividing operating expenses by sales.

$$\text{Operating Expenses Ratio} = \frac{Operating\ Expenses}{Sales}$$

Operating expense constitutes administration and selling expenses excluding interests. The ratio present the relationship between operating expenses and sale. In general, higher operating ratio tells inefficiency due to higher operating cost in terms of sales. Lower operating ratio favorable since it will generate higher operating income, which will be sufficient to meet interest, dividend and other expenses of the firm.

iii.   Return on total assets:

Return on total assets ratio is the proportion of net income after taxes plus interest expenses to total assets (total investment).

$$\text{Return on total assets} = \frac{\text{Net Income After tax + interest}}{\text{Total assets}}$$

It is the rate of return earned by the firm for all of its investments including the lenders fund. Higher return on total assets ratio shows higher earning of the firm in terms of its total assets. Lower ration indicates unsound financial position due to level ration of return.

3.6.2 Correlation co-efficient (r):

The co efficient is denoted by 'r' and indicates the direction of relationship between variables. In other words, correlation is the relationship between (or among) two or more variables (only one variable dependent and one or more variable (s) independent). Correlation analysis is defined as the statistical technique which measure the degree of relationship (or association) between / among the variables. Correlation analysis does not tell anything about cause and effect relationship. There are three types of correlation: simple, partial and multiple. But our concern is only with simple correlation. A method of measuring correlation is called 'person's coefficient of correlation. The correlation co-efficient can be calculated by using the following formula under Karl Pearson's method.

$$r \, X \frac{N \quad XY \, Z \quad X \quad Y}{\sqrt{N \quad X^2 Z(\quad X)^2} \mid \sqrt{N \quad Y^2 \, Z(\quad Y)^2}}$$

Where, N=number of observations.

X and Y are variables.

The value of correlation coefficient ranges from -1 to +1.

If r = 0, there is no relationship the variables.

If r = 1 correlation is perfectly positive

If r = -1 correlation is perfectly negative.

Closer the value of r +1 to -1, the higher the relationship between the variables and vice versa.

3.6.3 Regression analysis

Regression analysis provides certain insights into plan the data. It establishes the functional relationship between the variables of ones interest.

Y= a+ bx is the purposed relationship. Then utilizing, principal of least square, minimize the sum of the squares of errors, error is the different between observed value and estimated value. The estimates of 'a' & 'b' are,

b=…………………..(1)

and

a=…………………..(2)

Then the fitted regression model

Y= -a + bx

Where,

X=the cause (or depended) variables,

Y=the effect (or depended) variables,

a= the Y-intercept (the value of Y when X=0)&

b= the regression coefficient of Y on X (the rates of changes of Y with respect to)

3.6.4 Average

Average is the sum of all the observations divided by the number of observation. Average 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 some where within the range of the data, it is sometimes called a measure o central value.

Average is calculated by the dividing the sum of the observations with number of observations. The huge and unwieldy masses of data are confusing and difficult to remember, so we need a unique value representing them. The averages are the measures which condense a huge mass of data into single value representing the whole data, Averages are the typical values which lie between two extreme

observation of the entire data and give us the idea about the concentration of the values in the central part of the distribution.

3.6.5 Graphs:

Graphs help to show the general trend of the ratios in respect the time period a very common way of presenting data for two variables, which have a relationship, is in a figure or chart of graph that works best when the data is continuous. A figure is used to show the changes of dependent variables. It is common practice to place the independent variable along x– axis& dependent variables along y– axis. For the calculation, the researcher has selected the financial ratios as dependent variables and the time in years as independent variables.

3.6.6 Question & Interviews:

 To analysis the primary data the questionnaire techniques has been used.

These questions are asked to those employees who are not direct related to Jhapa branch

- Do you agree NEA has maintained any relevant policy regarding to receivable collection?
- Do you agree that current liabilities are used in the proper way to maximize the profit of NEA?
- Do you agree that total assets are used in the proper way to maximize the profit of NEA?
- Do you agree that total debt is used in the proper way to maximize the profit of NEA?
- Do you agree that capital is used in the proper way to maximize the profit of NEA?

⟩ Do you agree that gross revenues are used in the proper way to maximize the profit of NEA?

⟩ Do you agree that operating expenses are used in the proper way to maximize the profit of NEA?

These questions are asked to the employees of the Jhapa branch.

⟩ Is the work is interested which you are doing?

⟩ Is your salary sufficient for you?

⟩ How is your job challenging or risk?

⟩ Does your manager help in your work?

⟩ Do you get any chance to show your work?

⟩ Can use your own judgment in your work?

⟩ Are your friends helping your work?

⟩ How is the place where your work?

⟩ What is the condition of revenue collection of the branch?

⟩ Is the sales is in increasing trend?

⟩ Aren't the operation & maintenance expense higher then last year?

⟩ What is the condition of inventory of the branch?

3.6.7 Methods of presentation and analysis:

Simple methods of analysis have been used, data presentation and analysis has been divided into small sub – topics. Every result has been tabulated & clear interpretation on it has been given simultaneously. Detail of calculation has been presented in appendices at the end of the report. Tables, diagrams & graphs have been used to make report clear & easily understandable. Summary, conclusion & recommendation have presented at the last chapter of report.

CHAPTER -4

PRESENTATION AND ANALYSIS OF DATA

4.1 Introduction

The objectives of the study have been already highlighted in the first chapter. In order to accomplish the above objectives, descriptive and analytical research design has been followed, which are mentioned in the third chapter. The main objectives of has study is to evaluate the condition of sale and revenue in NEA, Jhapa. To analyze the relationship between these two factors, various presentation and analysis have been done in this chapter. As mentioned earlier, various financial and statistical tools have been used, in order to accomplish the targeted objectives.

However the study focused the relationship of sales and collection of NEA's collection. So here different statistical and financial tools are used to show the performance of the branch. Only relationship of sales and collection is not sufficient to this report so different analysis has been made in the report. The tools used for the purpose of analysis have been discussed detail in the research methodology. Some financial statistical tools have been used to evaluate the relationship of sales and collection. Under the financial tools I have included coefficient of coefficient the probable error of the coefficient of Correlation regression. IN the ratio analysis and attend is made to evaluate liquidity position, turn over ratio profit position and other important ratios, which help to evaluate the financial performance of NEA the whole analysis has been divided into the following sections.

〕 **Ratio Analysis**

〕 **Correlation Analysis**

〕 **Average**

〕 **Some other Analysis which has Done by Branch**

Before presenting the financial ratio and other calculation I think it is necessary to shows the status of the branch during seven year period. Those data are tabulate as:

Balance Sheet and Income statement

Table-1   **(Rs.in '000')**

Particulars	Fiscal Year						
	2057/2058	2058/2059	2059/2060	2060/2061	2061/2062	2062/2063	2063/2064
Total Assets	182254.38	205143.87	226453.83	248907.61	272405.24	304521.09	308787.0
Total Sales Unit	16892.50	17094.61	17112.47	17208.58	17138.97	18318.83	19732.92
Total Sales Amount	96824.58	100826.91	109932.82	115648.27	115576.84	121953.36	129932.72
Total Revenue Collection	96325.49	93626.50	95228.11	98077.07	97223.56	105256.20	110697.9
Debtors Up To	51218.63	62013.72	73210.51	91814.24	100253.87	115009.68	122526.8
Total Power Purchased Unit	25876.43	26049.32	26776.02	27094.32	26996.49	27259.78	29647.14
Total Power Purchased @ Rs.5.57	144131.73	145094.68	149142.45	150915.38	150370.43	151836.99	165134.54
Net Profit/Loss	-30126.46	-30546.32	-34624.90	-40083.15	-49487.13	-67304.90	-85756.89

Source: NEA Jhapa Balance sheet and Income Statement, 2008

Diagram: 1

Relationship between asles with collection & power purchased with sales:

```
        ┌─────────────────────┐
        │   Power Purchased   │
        └─────────────────────┘
                    │
┌──────────────────┐│
│   Loss Analysis  ││
└──────────────────┘│
                 ┌──────────┐
                 │  Sales   │
┌──────────────────┐        │
│ Debtors Analysis ││────────┘
└──────────────────┘│
                    │
┌──────────────────┐│
│    Collection    ││
└──────────────────┘
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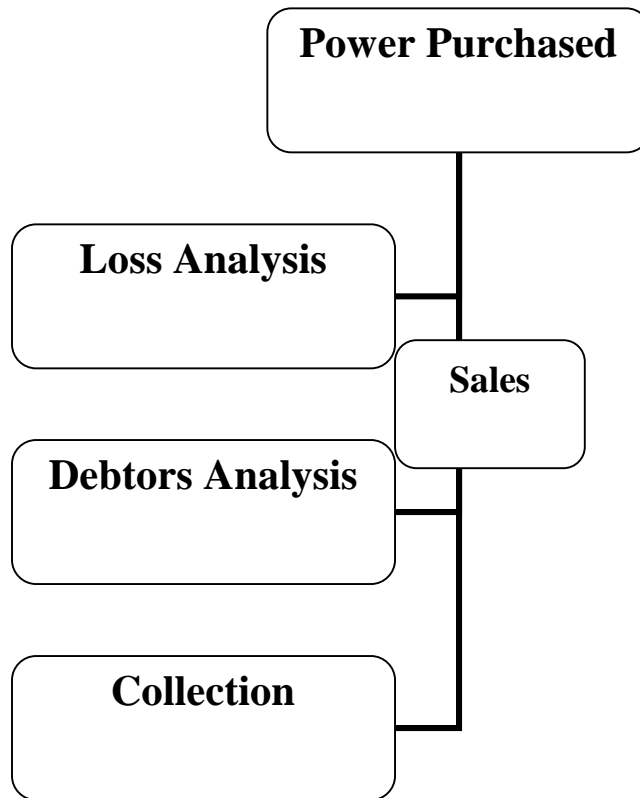
4.2 Ratio Analysis

The important financial tool for analysis of financial position is ratio analysis. It is defined as the systematic use of ratio to interpret the financial statement so that the strengths and weaknesses of a firm as well as its historical performance and current financial condition can be determined. In the base of this study financial ratios can be classified into.

4.2.1 Turnover ratio/Activity ratio:

Fund of creditors & owners are invested in various assets to generate sales and profits. The better the management of assets, the larger the amount of sale. Activity ratios are employed to evaluate the efficiency with which the firm manages and utilizes its assets. These ratio are also called turnover ratio because they indicate the speed with which assets are being converted or turned over into sales. So it involves a relationship

between sales and assets generally reflect that assets are managed well. Several activity ratios can be calculated to judge the effectiveness of assets utilization.

i. Total assets turnover ratio

According to the table shown the gross operating revenue of the branch has increased in each year. The investment on assets on assets had increased in each year as compared with the revenue generating ability. Total assets are the sum of fixed & current assets of the firm fixed assets have direct effect in the generation of sales. But there are also other assets that contribute to the production and sales activities of the firm. Therefore firm must manage its total assets efficiently and should generate maximum sales through their proper utilization.

The total assets turnover ratio of Jhapa branch has been computed by taking seven years data of net sales from the sale of electricity services.

Total assets turnover ratio = $\dfrac{\text{Sales}}{\text{Total Assets}}$

Sales and Total assets

Table-2   **(Rs.in '000')**

Fiscal Year	Sales	Total assets	Ratio
2057/2058	96824.58322	182254.3842	0.531260653
2058/2059	100826.9074	205143.8696	0.491493641
2059/2060	109932.8152	226453.8311	0.485453546
2060/2061	115648.2718	248907.6102	0.464623286
2061/2062	115576.8362	272405.2373	0.424282724
2062/2063	121953.3621	304521.0924	0.400475912
2063/2064	129932.7184	308787.0124	0.42078273

Source: NEA Jhapa Balance sheet and Income Statement, 2008

Fig. No. 1
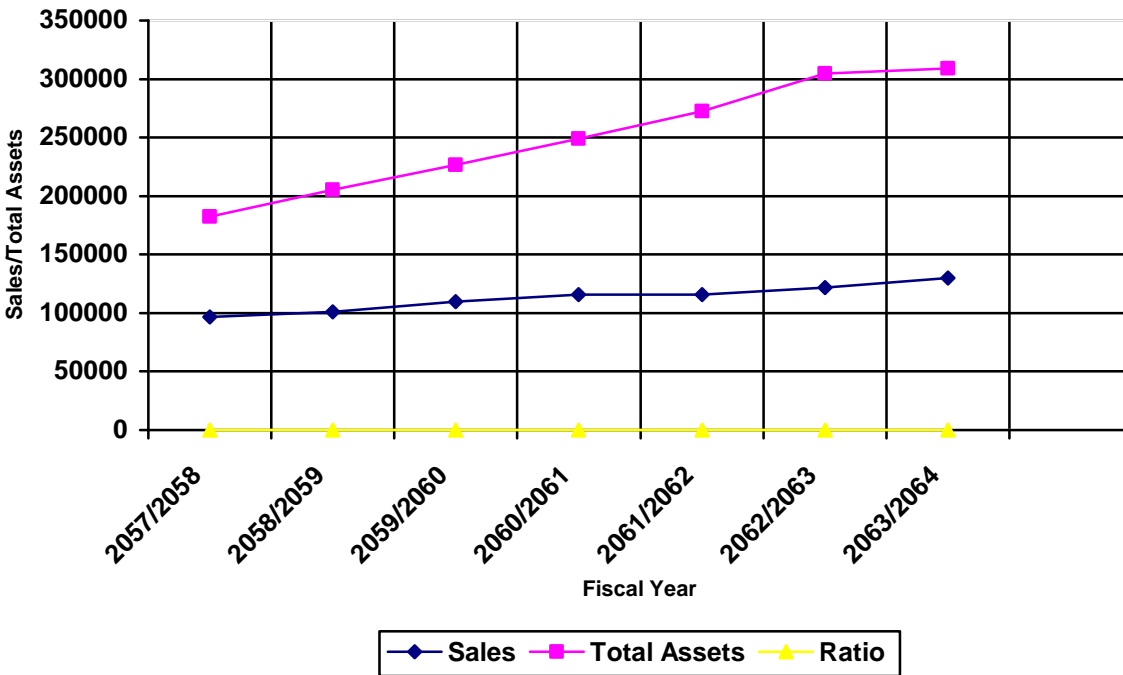
According to the above table, the net sale of the NEA has increased every year. The investment on assets has highly increased in each year. As compared with the revenue generating ability, investment on assets has highly increased during the year.

The total assets turnover ration showed the branch's ability of generating revenue from all the financial resources committed to the NEA Jhapa. The total assets turnover ratio indicated the sales generated per rupees of investment in total assets, In the years 2057/2058 NEA Jhapa has earned Rs.0.531 sales only for rupees of investment in its total assets. Like wise NEA Jhapa has earned only Rs.0.491 sales for its one rupee investment in the assets in 2058/2059. An average the branch has been able to produce only Rs.0.420 sales for one rupee investment in its total assets during the seventh year. This reflected the good status in comparison with total assets. The ratio showed that branch was effective in the utilization of its assets. The ratio was in an increasing trend. But it has not reached

a satisfactory level. The sales volume however seemed to be growing each year in comparison to total assets the result shows the good condition. During the year 2057/2058 to 2063/2064 the ratio of sales is increasing than total assets because the branch is not able to distribute its line (Assets) to remote place because of the poor political condition of the country. However the ratio shows the good condition but it will be very poor condition if we compare the sale to received unit of electricity. This position clearly indicates that the branch has properly utilized its assets. To generate sales revenue but there are many old out dated assets, which were not in auditor's position to provide desirable yield.

However there is unplanned investment in the assets of NEA, without making proper analyses of cost and benefits. Attention did not seem to be paid in the revenue generation aspects of assets and their effective utilization as well as the costs of investments. The low volume of sales in comparison to the investment made was the reason for this situation and at last it may be said that the management of NEA is either not able to utilize the assets properly or assets were purchased without considering the ability to generate revenue.

i. Debtors turnover ratio:

Debtor's turnover in found out by dividing credit sales by debtor. One of the major challenges with NEA at present is the problem of receivable management. It was due to mismatch of collection and its turnover. So to see the relationship between receivable and net revenue from sales the receivable turnover ratio is computed. In the following table the debtor's turnover ratio is shown:

Debtors' turnover can be calculated by dividing total sales by the year end balance of debtors.

Debtor's turnover ratio $\mathrm{X} \dfrac{Sales}{Debtors}$

Sales and Debtor's

Table-3   **(Rs.in '000')**

Fiscal Year	Sales	Total assets	Ratio
2057/2058	96824.58322	51218.63	1.890417141
2058/2059	100826.9074	62013.72	1.625880687
2059/2060	109932.8152	73210.51	1.501598898
2060/2061	115648.2718	91814.25	1.259589652
2061/2062	115576.8362	100253.87	1.05284165
2062/2063	121953.3621	115009.68	1.060374787
2063/2064	129932.7184	122525.84	1.060442934

Source: NEA Jhapa Balance sheet and Income Statement, 2008

Fig. No. 2
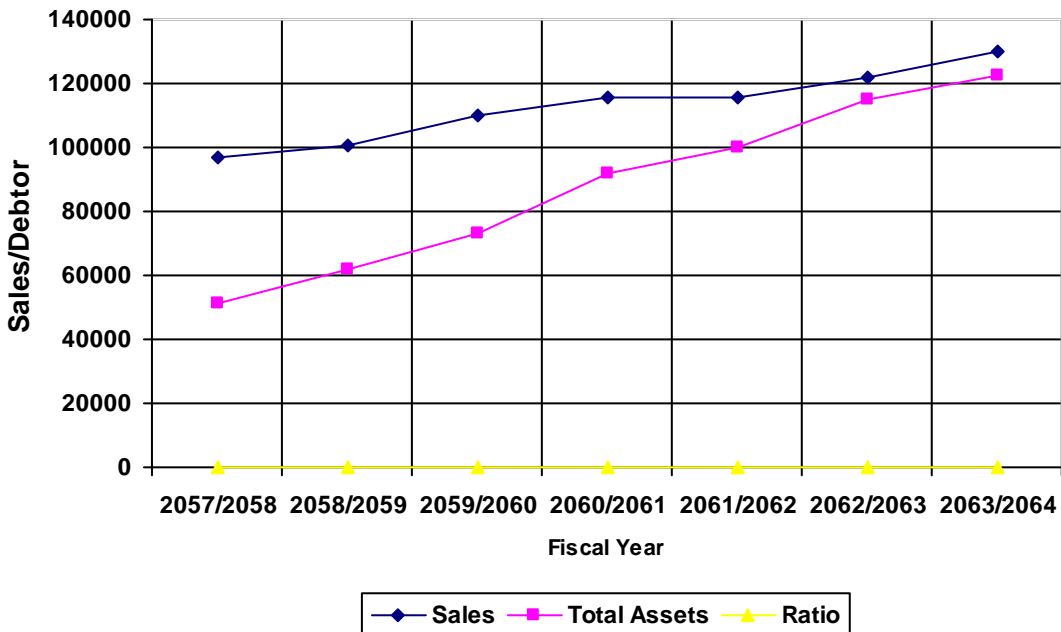
The analysis of debtor's turnover ratio supplements the information regarding the liquidity of one item of current assets of the firm. The ratio measures how rapidly debts are collected. A high ratio is indicates of shorter time lag between credit sales and cash collection. A low ratio shows that debts are not being collected rapidly.

In the table 3, it may be observed that the debtor's turnover ration has decreased in year 2057/2058 to 2061/2062. And in 2062/2063 or in 2063/2064. DTR is little bit more than in the past year. In this report we can see that beginning is very attractive as the time past DTR is becomes less than the previous years. There is only one reason by which DTR is decreasing rapidly. By the loose management, rules and regulations of the branch and poor political condition of the country the branch is unable to collect its revenue so the debtors is increasing highly. As we can see debtors' turnover ratio of NEA Jhapa in fiscal year 2057/2058 is 1.89 the sales and the debtors are increasing quickly in comparison of sales debtors is increasing rapidly so ratio has become 1.62, 1.50,1.25, 1.15, 1.06 and 1.06 in the year 2058/059, 2059/060, 2060/061, 2061/062, 2062/063 and 2063/064 respectively. It shows that in fiscal year 2057/058 debtors turnover ratio is high which indicates that shorter time jag to collect credit sales and cash collection. In fiscal year 2062/063 DTR is very low which indicates that longer time lag to collect credit sales and cash collection. In the year 2063/064 DTR is in improving condition because the ratio is high than the past year.

The branch has accepted that it is important to collect receivable timely. Some collection measures have been taken such as mobile team, 3% discount system to those customers who pay bills during 7 days of meter reading, extra charge after the due payment date etc.

NEA Jhapa Branch is small branch it has limited authority, resources and right it cannot mobilized its limited resources to entire district. So NEA Jhapa as well as central management should take it seriously in the collection of revenue. The NEA should improve the behavior and culture of the staff and it should be client oriented. On the other hand initiatives and correction actions should be taken in revenue collection form different sectors. Especially dues from government agencies and institutions streets lights which seemed to be the greatest defaulter should be given priority for collection. Finally it can be said that there is not any clear policy for debtors or receivable management in NEA.

ii.   Average collection period (ACP):

The average number of days which debtors remain outstanding is called average collection period. It can be computed as follows:

Average Collection Period (ACP) $\text{X} \dfrac{360}{Debtors \quad Turnover}$

Average Collection Period (ACP) $\text{X} \dfrac{Debtors}{Sales} \mid 360$

A.C.P.
Table-4   **(Rs.in '000')**

Fiscal Year	Debtors	Sales	DTR	ACP	
				Debtors/Sales*360	360/DTR
2057/2058	51218.63	96824.58322	51218.63	190.4341598	190.4341598
2058/2059	62013.72	100826.9074	62013.72	221.4184613	221.4184613
2059/2060	73210.51	109932.8152	73210.51	239.7444487	239.7444487
2060/2061	91814.24	115648.2718	91814.25	285.8073655	285.8073655
2061/2062	100253.87	115576.8362	100253.87	312.2718544	312.2718544
2062/2063	115009.68	121953.3621	115009.68	339.5026028	339.5026028
2063/2064	122526.84	129932.7184	122525.84	339.4807854	339.4807854

Source: NEA Jhapa Balance sheet and Income Statement, 2008

Fig. No. 3
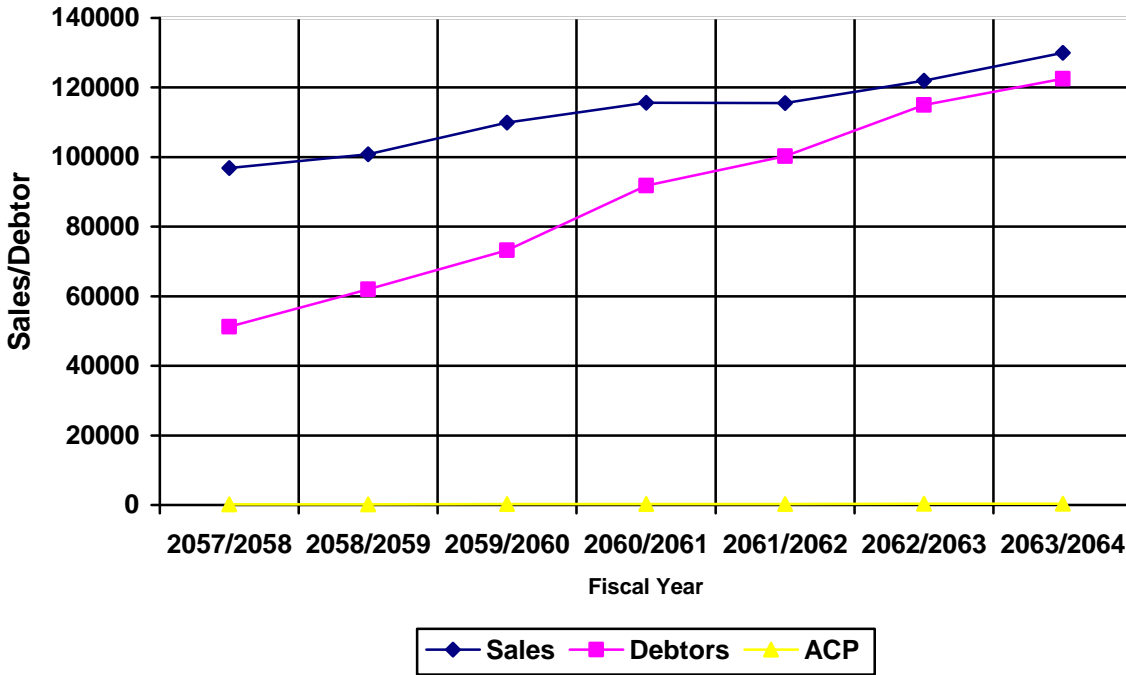
Average collection period (ACP) provides the information on the liquidity of the receivable. Shorter the period of collection, higher in the debtor's turnover ratio, higher duration of collection period is tying the wealth of business in the form ob debtors. To see the relationship between receivable and net revenue from sales the receivable turnover ratio and average collection period were computed. In the following table the debtor's turnover ratio and average collection period are shown. While calculating the average collection period it indicates inefficiency of the firm is collection of receivable. ACP is going in increasing trend. It indicates that the firm is failure to collects its debtors. Comparing the seven years ACP is the good in the year 2057/058 which is 190 days this shown that branch is able to decrease the time of debt collection. It is seen that the receivable is in and increasing trend over the seven years study period. It increased form Rs.51218630.00 to Rs.122526840.00 from the year 2057/058 to 2063/064. The revenue from sale of electricity was also on our increasing trend and it increased

Form Rs.96824580.00 to Rs.129932720.00 from the year 2057/058 to 2063/064. The collection period for the year 2057/058 is 190 days and it reached the peak days. It has increased 399 in the year 2063/064 during the 7 year period it is in increasing trend it shows the bad performance of the branch. The collection period for in the table may be observed that the debtor's turnover ratio is decreasing in the year 2057/058 to 2062/063. On the other hand average collection period is increasing but in the year 2063/064 it decreased 0.02 while DTR increased by 0.00007 it meant there is negative relationship between average collection period and receivable turnover ratio. On the basis of this it may be concluded that lower the collection period means the company gets recovered its cost quickly and so the turnover ratio will be high. It reveals that such low turn over of receivable or longer receivable collection period has greatly blocked the amount required for the working capital. The amount of revenue from sales has increased higher than the increase in amount of receivable.

We can see in the table when DTR is decreasing ACP is increasing. So the better performance of the branch is less ACP, higher DTR. In the case of NEA Jhapa branch the main cause of maximum receivable is large amount dues form street light about Rs.6,50,00,000.00 is due from street light which should be paid by the government, the branch is unable to recover that types of dues amount because of the loose management. However it is also the responsibility of the branch to collect its revenue by using different technique.

4.2.2 Profitability Ratio

A company should earn profits to survive and over a long period of time profits are essential, but it would be wrong to assume that every action initiated by management of a company should be aimed at maximizing profits, irrespective of

social consequences. It is unfortunate that the word 'profit' is looked upon as a term of abuse since some firms always want to maximize profits at the cost of employees, customer and society. Except such infrequent case, it is a fact that sufficient profits must be earned to sustain the operation of the business to be able to obtain funds from investors for expansion and growth and to contribute towards the social overheads for the welfare of the society.

Profit is different between revenues and expenses over a period of time. Profit is the ultimate 'output' of a company, and it will have no future if it fails to make sufficient of the company in terms of profits. The profitability ratios are calculated to measure the operating efficiency of the company, creditors and owners are also interested in the profitability of the firm. Creditors want to get interest and repayment of principal regularly. Profit position of NEA Jhapa can be found by applying the profitability ratios. Profitability ratio indicate the corporations overall efficiency of operations. It is true that higher the profitability ratios better the financial position and vice versa.

Net Profit Ratio

It shows the relationship between net profit and sales. In the following table, seven years data of net profit and revenue from sales of electricity services have been presented to calculated the net profit to sales ratio.

$$\text{Net Profit Ratio } X \frac{Net \ \Pr ofit \ (Loss)}{Sales}$$

Profit and Sales of NEA Jhapa

Table-5   **(Rs. in '000')**

Fiscal Year	Net Profit/Loss	Sales	Ratio
2057/2058	-30126.46	96824.58322	-0.311144731
2058/2059	-30546.32	100826.9074	-0.302958057
2059/2060	-34624.90	109932.8152	-0.31496412
2060/2061	-40083.15	115648.2718	-0.346595307
2061/2062	-49487.13	115576.8362	-0.428175184
2062/2063	-67304.90	121953.3621	-0.551890482
2063/2064	-85756.89	129932.7184	-0.660009982

Source: NEA Jhapa Balance sheet and Income Statement, 2008

Fig. No. 4
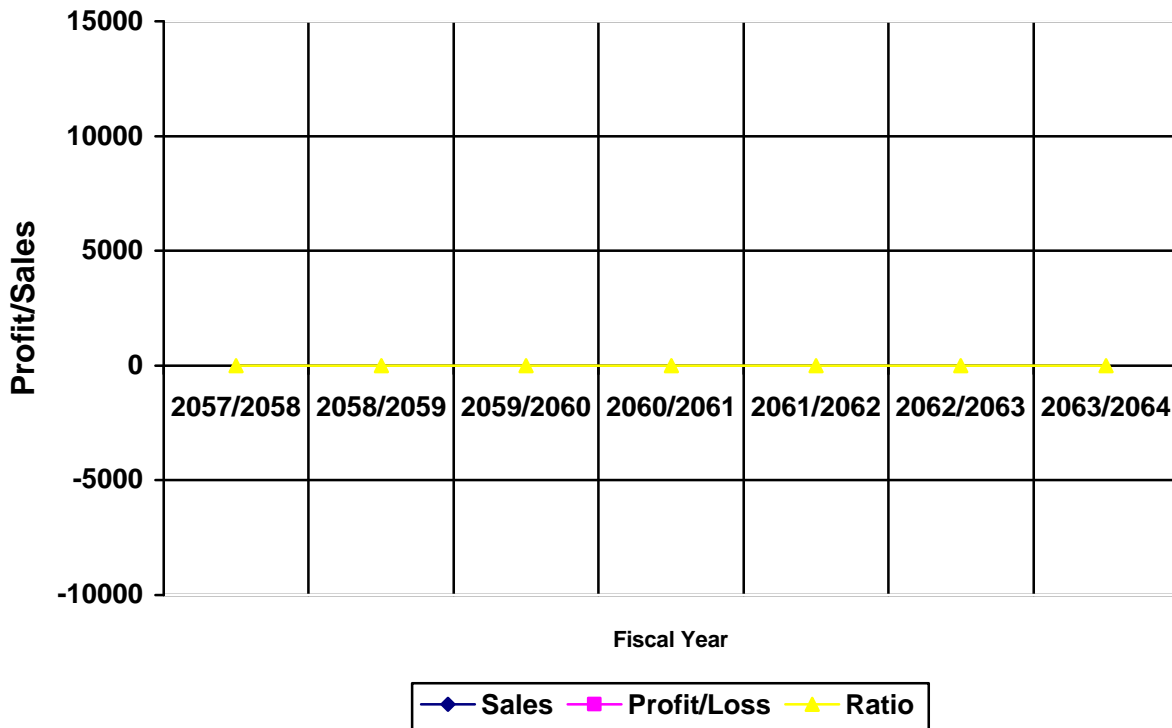
Sales Constitute the fundamental dynamic force in a business enterprise without sufficient sales of goods and services business may not be successful.

The ratio of net profit to sales shows the profitability of corporations indicating that the only increase in sales does not means anything unless it commands profit. Form this ratio it can also be acquired the information of the total expenses incurred during certain period of time. According to the table the branch has been suffering from having losses during the seven years period. It is in the increasing trend the negative ratio has been increased from -0.3111 in the year 2057/058 to -0.6600 in the year 2063/064. In the year 2057/058 the ratio is -0.3111 it shows the better performance because of the less negative profitability ratio. The negative ratio decreased to -0.3029 in the year 2058/059 it is the best profit ratio in the seven year period but it reached to -0.4281 in 2062/063 and in 2063/064 it goes to -0.6600. It shows that in the beginning five years the trend of increasing is less but in the last year it reached to -0.6600. Loss has been increased very highly in the last year, we have already discussed that because of the poor political condition of the country the branch is unable to collects it revenue. So the income of the branch is moving very slowly however sales and revenue collection is also in the increasing trend but in comparison with profit the increasing trend of sales is very slow. The main cause of the loss is maximum receivable. An expense of the branch (Capital or Maintenance) is not so high so we can't say that the reason behind the loss was heavy operating expenses. The branch received electricity from sub-stations (Transmission) and sold to the consumer. The difference between the received unit of electricity and consume unit of the electricity is loss. In the way there are two types of loss technical loss and non technical loss both types of losses harms profit of the branch. In the fiscal 2057/058 and 2058/059 entire NEA goes through the profit but the Jhapa branch

is suffering from loss. Some other factor is also involved in the loss of the branch. The reason behind the loss was depreciation and doubtful debts are also become instruments to cut off profit margin.

4.2.3 Sales to power purchased ratio

When we calculate sales amount to different ratios, I think it is important to show the relationship between Sales to Power Purchased. Here power means that electricity which branch took from transmission section. We have already known that transmission get power from generation and supply to distribution sector. NEA Jhapa is a small branch of a distribution sector. It gets power from transmission section and sold it to the consumer. The Variation between these two factors is profit/loss. The ratio between sales and power received has shown in the table below:

$$Ratio \, X \frac{Sales \ Amount}{Power \ Purchased \ Amount}$$

Sales and Power Purchased of NEA Jhapa

Table-6 (Rs. in '000')

Fiscal Year	Sales	Power Purchased @ Rs.5.57	Ratio
2057/2058	96824.58	144131.73	0.671778393
2058/2059	100826.91	145094.68	0.694904212
2059/2060	109932.82	149142.45	0.737099414
2060/2061	115648.27	150915.38	0.76631201
2061/2062	115576.84	150370.43	0.76861411
2062/2063	121953.36	151836.99	0.803186132
2063/2064	129932.72	165134.58	0.786829265

Source: NEA Jhapa Balance sheet and Income Statement, 2008

Fig. No. 5
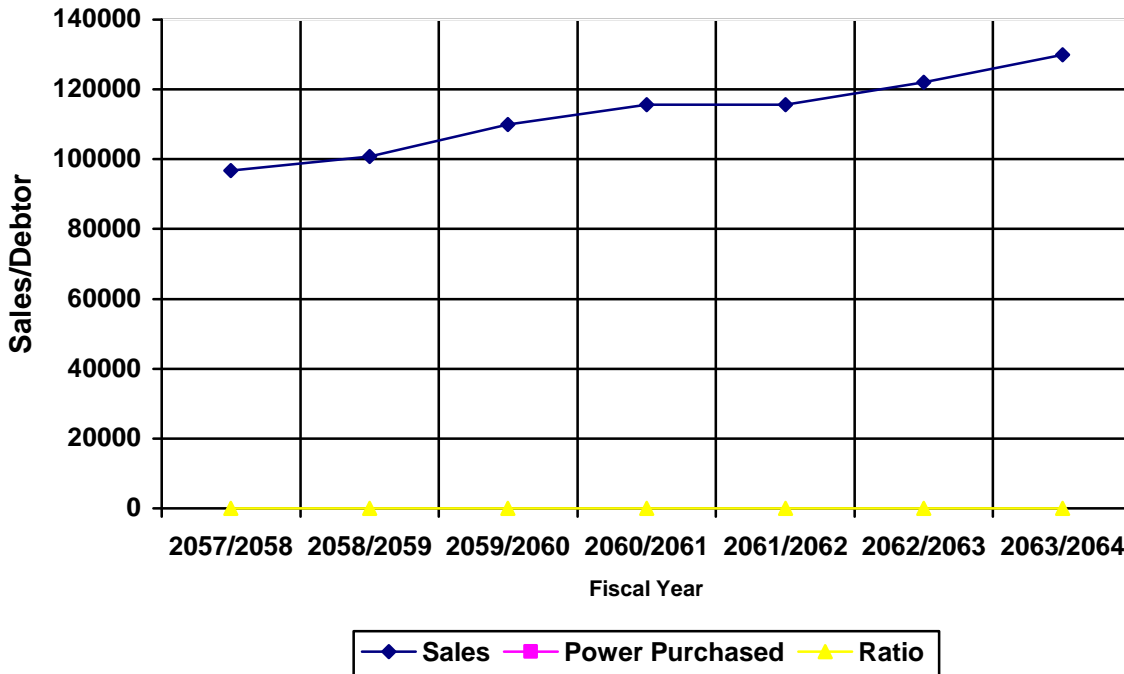
4.2. Relationship between sales and revenue collection:

We know that NEA is service oriented organization, however it has its own problems in the field of distribution. In other hand earning profit is also its aim. It is true that the organization is not able to run its business successfully. So the huge amount of loss is increasing continuously.

The primary objective of NEA is to generate, transmit and distribute adequate, reliable and affordable power by planning, constructing, operating and maintaining all generation, transmission and distribution facilities in Nepal's power system both interconnected and isolated.

Diagram: 2

The main functions of NEA:-

```
                    NEA

    GENERATION      TRANSMISSION      DISTRIBUTION

                            SALES      COLLECTION

Overall          Debtors        Profit/Loss        Financial
Performance      Analysis       Analysis           Performance
Indicator of
NEA/Branch
```

68
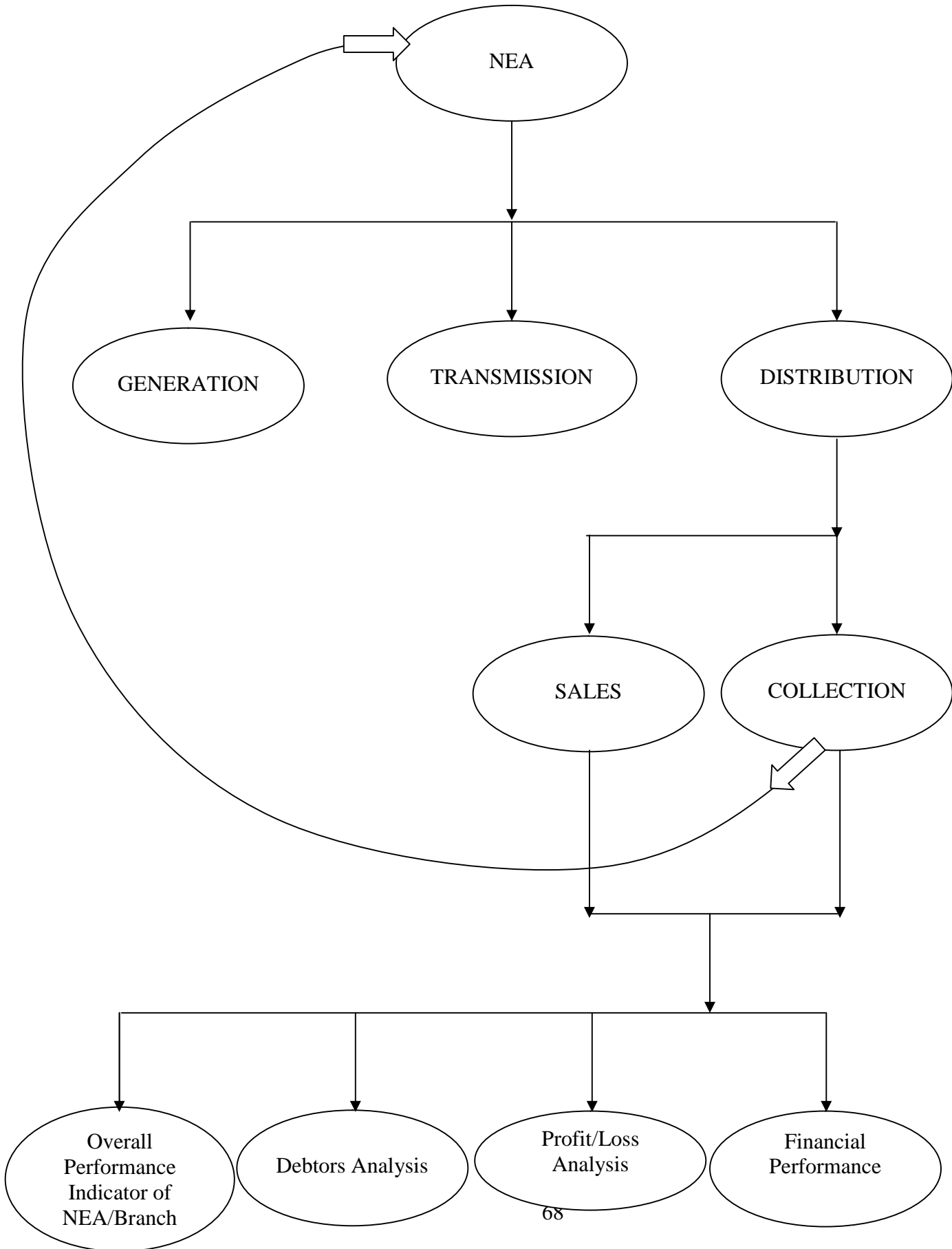
I don't think so it is necessary to describe the functions of NEA because the above diagram shows the view / image of NEA very clearly. We knew that NEA has main three sectors among three sectors distribution is the most important sector of NEA or it is the back bone of NEA. Different operations which are done by NEA those operations are ended at distribution sector. In results NEA get its revenue collection by distribution sector. The revenue which NEA gets from distribution sector is the main income source of NEA. So these two factors sales and collections play vital role in NEA.

Here we are gong to discuss the relationship between these two factors. To show the clear view it is necessary to show that what portion of sales and collection have taken the branch to entire NEA's sales and collection.

4.2.5 Collection to sales ratio of branch:

Revenue from sale of electricity is recognized at the time of raising of bills on the consumers. The revenue collection is the collected amount to NEA's counter which is collected by the consumers of NEA.

Return on sales presents relationship between sales and collection of the branch. This shows the percentage of collection on sales. The profitability of the branch is also measured by the relation of sales to collection. An organization makes a huge amount of sales with the expectation that the sales will yield a reasonable amount of profit. The following table shows the return on sales of NEA Jhapa over the period of seven years.

$$Collection\% to\ Sales\ X\frac{\operatorname{Re}venue\ Collection}{Sales}$$

Revenue and Sales of NEA Jhapa

Table – 7 (Rs.in '000')

Fiscal Year	Revenue Collection	Sales	Ratio
2057/2058	96325.49	96824.58	0.994845429
2058/2059	93626.50	100826.91	0.928586444
2059/2060	95228.11	109932.82	0.866239167
2060/2061	98077.07	115648.27	0.848063397
2061/2062	97223.56	115576.84	0.841202834
2062/2063	105256.20	121953.36	0.863085654
2063/2064	110697.97	129932.72	0.851963751

Source: NEA Jhapa Balance sheet and Income Statement, 2008

Fig. No. 6
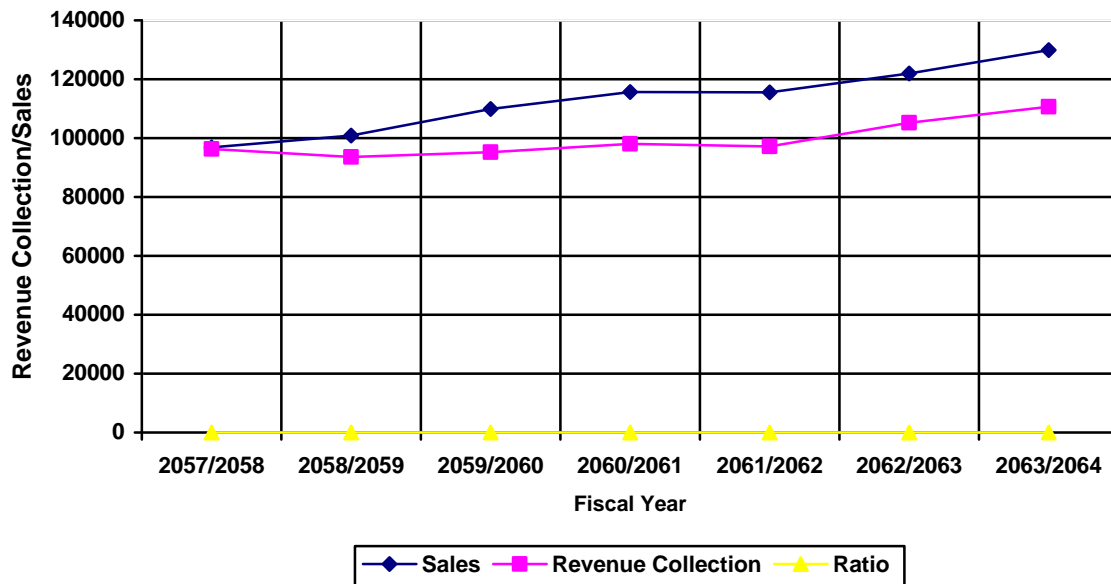
Here % of collection on sales denotes the feed back of sales. As a result the ratio has become highest in the year 2057/258 which is 99%. It shows the better performance of the branch. The return on sales, which was not much unsatisfactory during the year 2058/059 which comes 92%. Later the ratio is declining. In the year 2061/062 it shows the poorest performance of the branch in

the seven year study. However it is not so bad % of collection to sales, but in comparison to other fiscal year is the poorest one. Only 84% collection has been made in the year 2061/062. Little improvement is shown in the year 2062/063 by increasing 2% than precious year. In the last year it again falls by 1%. The report shows that, in the seven year period 15% collection has been fall in the comparison to sales.

In conclusion the ratio of collection to sales is poor which threatens the survival of NEA Jhapa. The overall ratio analysis thus indicates relatively poor performance of the branch. Ratio during the years has decreasing that means the branch is in big trouble in the mobilization of its resources.

4.2.6 Ratio of branch's sales to total sales of NEA:

The main key of profit is sales this is very important factor of any business. NEA is service oriented organization but it has also an aim to get maximum profit by minimum risk. An organization must earn sufficient amount of profit to survive and sustain in the future from its operation. Without it no firm/organization can exist and the future of the company will be jeopardized therefore, profit is the ultimate outcome of company. So to survive itself NEA is expanding is area day by day. Here Jhapa branch has small contribution to total NEA's sales.

Ratio of branch's sales to entire NEA's sales shows the contribution of the Jhapa branch. In the following table, seven years data of sales of electricity of NEA's as well as branch's have been presented.

$$Ratio \ X \frac{Branch's \ Sales}{Total \ Sales}$$

Comparison of Sales of NEA Jhapa and Entire NEA

Table – 8   (Rs.in '000')

Fiscal Year	Jhapa Branch's Sales	Entire NEA's Sales	Ratio
2057/2058	96824.58	5396800.00	0.01794111
2058/2059	100826.91	5466410.00	0.018444812
2059/2060	109932.82	8160800.00	0.013470838
2060/2061	115648.27	9476200.00	0.012204077
2061/2062	115576.84	11012600.00	0.010494964
2062/2063	121953.36	11814600.00	0.010300059
2063/2064	129932.72	12623600.00	0.010292842

Source: NEA Balance sheet and Income Statement

Fig. No 7
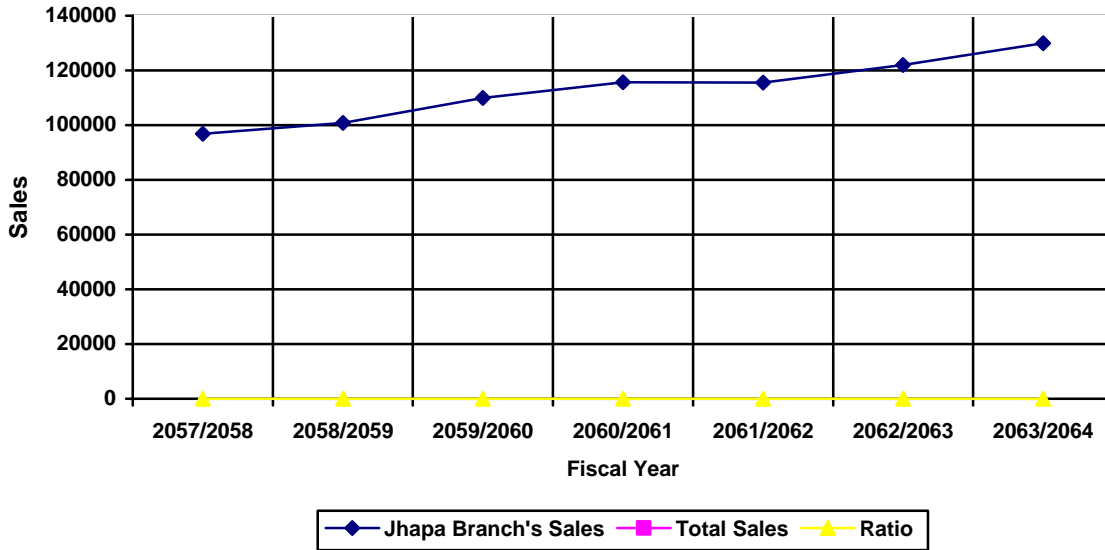
According to the above table, NEA Jhapa branch is a very small branch because only 1.4% (approximately) of sales has taken part in total sales. However NEA Jhapa has a large distribution area in comparison to other branch of Kathmandu valley. But there are not so many industries, hotels and other business. So the consumption of electricity is limited in only domestic use. That's why % of sales become very less. The above report shows that, in the F/Y 2058/059 the branch's

sales reached to the peak it is 1.84%. In the F/Y 2063/064 it comes to the layer which is 1.02% this is the worst performance among 7 years. Total sales of NEA is increasing rapidly, in comparison to total sales, sales of the branch is increasing very smoothly after the F/Y 2061/062 is very poorest because the ratios fall down in a great different than previous year. There are many reasons behind these falls of sales in the branch. Different types of losses took part in this type of falls; Jhapa district is full of many rural areas, so the branch is suffering by different types of problems. All organizations have their own problems but they have to face those problems to run the business in the competitive world.

4.2.7 Ratio of branch's revenue collection to total revenue collection of NEA:

The % of Branch's revenue on total revenue presents relationship between total revenue and branch's revenue. This shows the contribution of branch's revenue on total revenue. The profitability of an organization is also measured by above relation. NEA has makes a lot of investment on its assets with the expectation that the investment on such assets will yield a reasonable amount of profits as revenue collection. The following table shows the return on total assets of NEA over the period of nine years.

$$Ratio \; X \frac{Branch's \; Collection}{Total \; Collection}$$

Revenue collection of Branch and Entire NEA

Table – 9   **(Rs.in '000')**

Fiscal Year	Revenue Collection of the Branch	Total Revenue Collection	Ratio
2057/2058	96325.490	5496821.000	0.017523854
2058/2059	93626.500	7025158.000	0.013327316
2059/2060	95228.110	8377832.000	0.011366677
2060/2061	98077.070	9687645.000	0.010123933
2061/2062	97223.560	11237491.000	0.008651714
2062/2063	105256.200	12055235.000	0.008731161
2063/2064	110697.970	12968436.000	0.008535954

Source: NEA Jhapa Balance sheet and Income Statement
Fig. No. 8
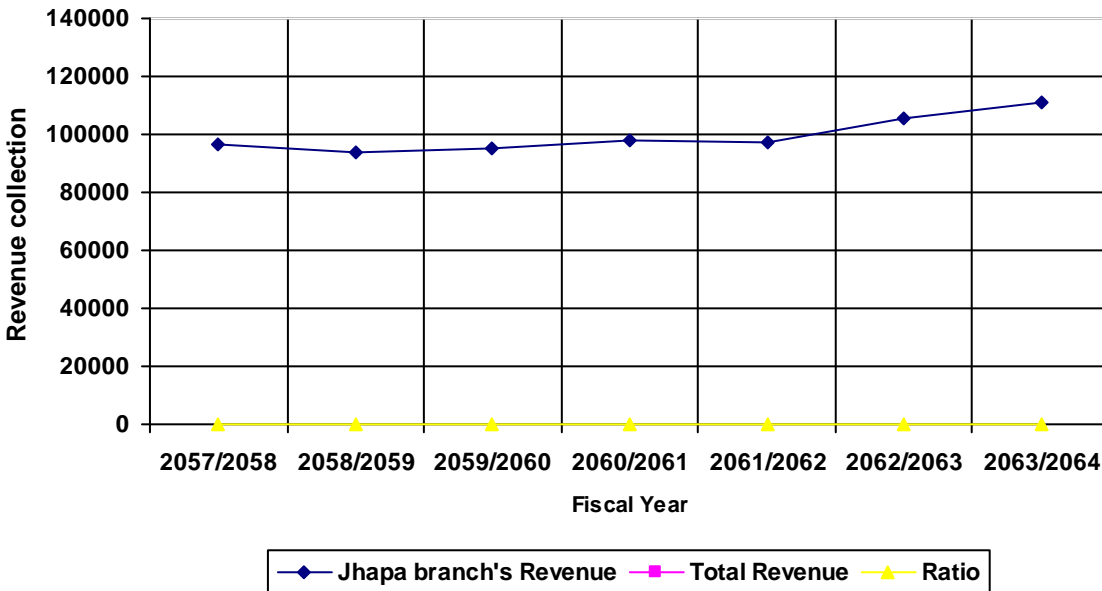
Every organization starts its business in expectation that it will earn maximum profit by minimum level of risk. Some produced goods and some provide its services. In both case the main aim is to earn maximum profit by minimum level

of risk. NEA is service oriented organization, having an aim to earn maximum profits. It provide its services to its consumer's although it has an aim to earn profit but now a days it is suffering by heavy loss. We have already known that the main resource's of NEA to run its operations is revenue collection.Total revenue collection of NEA gathered by different branches which it gets form only distribution sector. Here Jhapa branch is also a small distribution center however its area is very large but there are so many rural areas. So the consumption of power is limited only in the domestic use. The above table shows that the Jhapa branch is very small branch in case of distribution of power because in the Fiscal Year 2063/064 only 0.85% has been made by the branch or it is the worst performance in the seven year period. In F/Y 2057/058 the collection % is 1.75 but in 2063/064 it comes to 0.85%. It shows the heavy difference in collection % in 7 years. In comparison to total collection of 2057/058 0.90% collection has been reduced in the year 2063/064. By the above table F/Y 2057/058 was the golden year of collection because the collection % in the peak it is 1.75%. Later it becomes fall down. The total collection is climbing up very fast we can see it in the graph. Having least % of collection it is difficult to see branch's collection in the graph. However the collection of the branch is also in the increasing trend but in comparison to total collection it is very unsatisfactory. By the table in the F/Y 2057/058 it is 1.75% after then it comes 1.33%, 1.13%, 1.01%, 0.086%, 0.087% and 0.085%. It shows the little bit improvement in the year 2062/063 which increased by 0.001%. If the conditions of the branch not improved it will be difficult to survive it. There is not any competitor of NEA because of the large distribution, generation and transmission area. If any competitor is seen in the market of hydro electricity no one can save NEA. But it can save itself by improving its management efficiency, human resource, assets etc.

4.3 Correlation analysis

The correlation co–efficient is denoted by 'r' and indicates the direction is the relationship between variables. In other words, correlation is the relationship between (or among) two or more variables. In correlation analysis, only on variable is treated as dependent and one or more variables are treated as independent. Correlation analysis is defined as the statistical technique which measure the degree of relationship (or association) between/among the variables. Correlation analysis does not tell any thing about cause and effect relationship. It refers the closeness of the relationship between two or more variables are said to be correlated if change in the value of one variable appears to be related or linked with the change in the other variables.

There are three types of correlation: simple, partial and multiple. But our concern is only the simple correlation. A method of measuring correlation is called 'Karl Pearson's coefficient of correlation'.

Here formula for calculation the Correlation Coefficient is given below:–

r^{xy} X Correlation coefficient between X and Y.

$$r^{xy}X\frac{N \quad XY- \quad X. \quad Y}{\sqrt{N \quad X^2 Z(\quad X)^2}\mid\sqrt{N \quad Y^2 Z(\quad Y)^2}}$$

r^{xz} =Correlation coefficient between X and Z.

$$r^{xz}=\frac{N \quad XZ Z \quad X. \quad Z}{\sqrt{N \quad X^2 Z(\quad X)^2}\mid\sqrt{N \quad Z^2 Z(\quad Z)^2}}$$

There are the formulas to calculation the correlation coefficient. The three models show the relationship between each variable with other. Either they are correlated or not or either they have positive relationship or negative.

In this analysis, the correlation coefficients between following variables are calculated and analyze the relationship between revenue sales and collection.

❖ Sales, Revenue collection and debtors of the branch.

❖ Sales of the Branch and Total Sales

❖ Revenue collection of the Branch and Total Collection

1.   Sales, revenue collection and debtors of the branch:

Revenue collection is a main source NEA. It is a collected amount from the consumers. Those revenue collections are collected on the basis of sales. If the sale of the company is high the revenue collection will also be high. The variance between the revenue collection amounts on total sales amount. The relationship between debtors, collections and sales has been analyzed by using the Karl Pearson's correlation coefficient formula. In order to find out the relationship between these variables, the correlation coefficient has been calculated. From the calculation,. It is attempted to measure where increase in sales effects revenue collection or not. Or increase in sales effects debtors or not. The calculated correlation coefficient and the respective probable error have been shown in the following table.

Where.

1=Correlation coefficient between two variables X and Y and X to Z.

X=Sales

Y=Revenue collection

Z=Debtors

N=Number of observations.

Sales, Revenue and Debtor of Branch NEA Jhapa

Table – 10　　　　　　　　　　　　**(Rs.in '000')**

S.No.	Fiscal year	Sales(x)	Revenue collection(Y)	Debtors(Z)
1.	2057/058	96824.58	96325.49	51218.63
2.	2058/059	100826.91	93626.50	62013.72
3.	2059/060	109932.82	95228.11	73210.51
4.	2060/061	115648.27	98077.07	91814.24
5.	2061/062	115576.84	96223.56	100253.87
6.	2062/063	121953.36	105256.20	115009.68
7.	2063/064	129932.72	110697.96	122526.94

Source: NEA Jhapa Balance sheet and Income Statement

The correlation results

	Correlation coefficient	Probable Error
Sales and collection(XY)	0.08594	0.06861
Sales and debtors(SZ)	0.9802	0.00998

The Karl Pearson's correlation sales and revenue collection of NEA Jhapa is 0.8594 and probable error is 0.06861. This figures shows that there is high degree of positive correlation between these variables. The value of probable error clarifies that the relationship between sales and revenue collection of NEA Jhapa is significant because the correlation efficient is more than six times the probable error. It explains that collection is increasing in the same manner as a sale is increasing.

On the other side, the Karl Pearson's correlation efficient between sales and debtors of NEA Jhapa is 0.9892 and probable error is 0.00098. This figures shows

that there is high degree of positive correlation between these variables. The value of probable error clarifies that the relationships sales and debtors of NEA Jhapa is significant because the correlation coefficient is more than six times the probable error. The increasing trend of the sales and debtors is in the same way. It explains the positive relationship between sales and debtors.

II.   Sales of the branch and total sales of NEA:

The relationship between sales and total sales of NEA has been analyzed by using the Karl Pearson's correlation coefficient formula. In order to find out the relationship between these variables, the correlation coefficient has been calculated. From the calculation, it is attempted to measure where increase in total sales. It is true that there is a positive relationship between the total sales and the branch's sales but at what ratio? Here is the calculated correlation coefficient and the respective probable error has been shown in the following table to show the amount of the relationship between these two factors.

Where,

r= correlation coefficient between two variables X and Y

x= Total sales of NEA

y= Branch's Sales

N= Number of observations.

Sales and Total Sales of NEA

Table – 11 (Rs. in million)

S.No.	Fiscal Year	Entire Nea's Sales(X)	Salesa of Jhapa Branch (Y)
1.	2057/058	5396.80	96.82
2.	2058/059	5466.41	100.83
3.	2059/060	8160.80	109.93
4.	2060/061	9476.20	115.20
5.	2061/062	11012.60	115.58`
6.	2062/063	11814.60	121.95
7.	2063/064	12623.60	129.93

Source: NEA Jhapa Balance sheet and Income Statement

The correlation result

	Correlation Coefficient	Probable Error
Total Sales and Sales of the branch (XY)	0.9709	0.01462

The Karl Perarson's correlation coefficient between Total sales and Jhapa branch's sales of NEA is 0.9709 and probable error is 0.01462. This figures shows that there is high degree of positive correlation between these variables. The value of probable error clarifies that the relationship between Total sales and branch's sale of NEA is significant because the correlation coefficient is more than six times the probable error. It explains that the branch's sale is increasing in the same manner as a total sale is increasing. But the ratio of branch's sales to total sales is not 100% so we can say there is high degree of positive correlation between total sales and branch's sales, not perfectly positive correlation

III. Revenue collection of the branch and total collection :

It is true that the sale is major part of the organization. Without any feedback there is not any importance of sales. The amount which NEA collects from the consumer is revenue collection. NEA is not able to collect its revenue from consumer due to the poor management of the organization, and some other political obstacles. In the total revenue collection of NEA Jhapa branch has also some correlation. Here I am trying to show the relationship between Total collection by the Jhapa branch. Whether there is any relation between total collection and branch's collection?

It is analyzed by using the Karl Pearson's correlation formula. In order to find out the relationship between these variables, the correlation coefficient has been calculated. From the calculation, it is attempted to measure where increase in total collection affects the branch's collection or not. It is true that there is a positive relationship between the tow factors but at what ratio? Here is the calculated correlation coefficient and the respective probable error has been shown in the following table to show the amount of the relationship between these two factors.

Revenue collection of the Branch and Total collection

Table –12   (Rs. in million)

S.No.	Fiscal Year	Total Collection'sfo NEA's (X)	Collection of the Jhapa Branch (Y)
1.	2057/058	5496.92	96.33
2.	2058/059	7025.16	93.63
3.	2059/060	8377.83	95.23
4.	2060/061	9687.65	98.08
5.	2061/062	11237.49	97.22
6.	2062/063	12955.24	105.26
7.	2063/064	12968.44	110l70

Source: NEA Jhapa Balance sheet and Income Statement

The correlation results of Table -12

	Correlation Coefficient	Probable Error
Total Collection and Collection of the branch (XY)	0.8010	0.09137

Collection amount of the branch takes very minor part of the total collection. It is true that there is a positive relationship between the total collection and the branch's collection but at what ratio? The above table shows the amount of the relationship between these two factors. The Karl Pearson's collection coefficient between Total collection and Jhapa collection of NEA is 0.8010 and probable error is 0.09137. This figure shows that there is high degree of positive correlation between these variables. The value of probable error clarifies that the relationship between Total sales and branch's sales of NEA is significant because the correlation coefficient is more than six times the probable error. It explains that

the branch's collection is increasing in the some manner as a total collection is increasing. But the ratio of branch's sales to total sales is not 100% so we can say there is high degree of positive correlation. To be the perfectly positive correlation r^{xy} should +1. But the correlation coefficient between X and Y is only 0.8010, it clarify that branch is not able to collect its revenue amount in comparison to entire NEA.

However total NEA's collection in not also satisfied. To made satisfied revenue collection NEA has to make a great revolution on its rules, regulation, strategy and plans. Billing should be made realistic through various collection measures such as encouragement of lump sum, payment through attractive discount, use of mobile collection centre to the long distance customer, blacklisting of longer non–paying customer's immediate action like disconnection to customer not paying in time etc. In addition the collection of outstanding bill can be increased by indirect Measures like sufficient counter facilities, payment through bank and regular monitoring.

Following chart shows the strategy of the collection procedure of outstanding debtors. By the loose plans of the organization those types of consumers don't pay the consumed bill in time.

Strategy of the collection procedure of outstanding debtors

Identify the total amount of outstanding bill

↓

Different sectors of outstanding bill should be classified.

↓

Most sensitive of outstanding bill should identify.

↓

Prepare appropriate policy to collect the outstanding bill

Indirect collections measure like sufficient counter facilities, payment through bank & regular monitoring.	Central account should provide adequate budget for its office to pay outstanding bill in time.	Attractive collection policies i.e. discount rebate and prepaid scheme etc.

↓ ↓ ↓

Establish the mobile collection centre to the long distance customer.	Immediate action of line disconnection to customers not paying in time.	Blacklisting of longer non-paying customer.

4.4 PAP (Performance Audit Period) Report:

In order to made electricity service available to larger portion of population, necessary course of action has to be taken for strengthening of transmission and distribution systems. Considering the need for reinforcement of transmission and distribution system it will be a priority of NEA to focus more to strengthen and expand the transmission and distribution system in order to encompass more power market and to provide quality service to its customers.

1. Distribution centers:

In continuation of its reform process, NEA has so far implemented a profit center strategy in twenty of its distribution branch offices to run them more effectively on a semi-autonomous model. In order to regulate the Distribution Centers by allocating specific mandate, responsibilities and authorities the NEA Board has approved the Distribution Center By-laws of February 10, 2003.

The main responsibilities of the Distribution Centers are as follows:-

- ❖ To adhere to the commercial principles as specified in Nepal Electricity Authority Act, in the execution of their works.
- ❖ To provide prompt services to the consumers in a simplified manner.
- ❖ To develop a system for result oriented performance.
- ❖ To mobilize the manpower most effectively in fulfilling the organizational goals.
- ❖ To provide reliable, safe and quality power supply to the consumers.

So far, NEA has established the following 21 Distribution Centers:-

1.	Kathmandu Center	8.	Thimi	15.	Bharatpur
2.	Kathmandu East	9.	Biratnagar	16.	Ratnanagar (Tandi)
3.	Kathmandu West	10.	Jhapa	17.	Pokhara
4.	Kathmandu North	11.	Janakpur	18.	Butwal
5.	Lalitpur	12.	Rajbiraj	19.	Bhairahwa
6.	Pulchowk	13.	Hetauda	20.	Nepalgunj
7.	Bhaktapur	14.	Birgunj	21.	Birtamod

The Distribution Centers are evaluated for each Performance Audit Period (PAP) on a yearly basis based on following performance indicators:

1. Loss Reduction
2. Average Collection Period
3. Stock Turnover Ratio
4. Capital Works Progress
5. Connection Period
6. Reporting and Data management

After the approval of distribution center act, Jhapa branch has now become Jhapa distribution center. Now the branch has specific mandate, responsibilities and authorities. Profit center is the synonym of distribution center, which represents that the branch has its right on the profit which it gains by its activities. To gain the profit performance of the branch should be good.

2. Here are some reports which show the branch's performance:

Nepal Electricity Authority
Jhapa Distribution Centre
P.A.P. (Performance Audit Period) Report

S.N.	Detail	2057/058	2058/059	2059/060	2060/061	2061/062	2062/063	2063/064
1	**Electricity Consume Detail**							
1	Total No. of consumer	21086	22626	24326	26226	28208	30042	31695
2	Total Received Unit	25876433	26049315	26776024	27094324	26996487	27259782	29647141
3	Total sales unit	16892497	17094610	17112469	17208580	17138971	18318826	19732924
4	Loss % of electricity	3472	34.38	3609	36.49	36.51	32.80	33.44
2	**Electricity Sales and Collection Detail**							
1	Electricity Sales Amount	96824583.22	100826907.40	109932815.22	115648271.83	115576836.17	121953362.12	129932718.41
2	Collection Amount	96325494.01	93626499.40	95228110.25	98077066.20	97223562.21	105256197.34	110697966.14
3	Collection %	99.48	92.86	86.62	84.81	84.12	86.31	85.20
3	**Sales and Collection of electricity without street Light**							
1	Sales of electricity without street light	91921308.22	95402007.40	101563555.22	106262939.83	106191504.17	112568030.12	120547386.41
2	Collection without Street Light	96325494.01	93626499.40	95228110.25	98077066.20	97223562.21	105256197.34	110697966.14
3	Collection % without Street Light	104.79	98.14	93.76	92.30	91.55	93.50	91.83
4	**Total Due Amount**	51218633.78	62013718.59	73210506.03	91814244.13	100253869.36	115009677.36	122526836.9
5	**Total Due of Street Light**	19148225.04	24573125.04	32942385.04	45707025.64	55097719.24	47014434.59	56411154.59
6	**Total Due Amount without Street Light**	32070408.72	37440593.55	40268120.99	46107218.49	45156150.12	67995242.77	66115682.33
7	**Average Collection Period without Street Light**	125.60	141.28	142.73	156.20	153.08	217.45	197.45
8	**Stock Turn Over Ratio**	0.856	0.917	0.837	0.884	0.709	0.736	0.830
1	Stock Balance	10456974.30	9845624.20	12254560.22	10146426.51	15487384.40	12565924.35	9441588.40
2	Store Expenditure	8954621.30	9024897.20	10254898.20	8973458.50	10987384.88	9250438.50	7836952.50
9	**Details of New Connection**	Done	Done	Done	Done	Done	Done	Done
10	**C.W.I.P**	Nill	Nill	Nill	Nill	Nill	Nill	Nill
11	**Report and Data management**	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The name of this report is P.A.P. Report which shows the performance of a branch of a certain period. Or it is also the performance indicator of a branch because it shows over all performance of a branch. Such as collection %, A.C.P. of the branch, Loss of the branch, D.T.R. of the branch, Stock turns over of the branch, Data management of the branch and total due of the branch with or without street light. These types of data show the clear view of the branch.

❖ Electricity consume detail

This part of the report says that what is the increasing trend of the consumer? How much the branch received power form transmission and how much it sold? By the combination of received and sales of power it helps to calculate the % of loss of electricity.

The increasing trend of the consumer is good, due to many rural areas there are about 10000 consumers increased in the 7 year period.

$$Loss\% \ X \frac{Sales \ Unit}{Power \ Purchased \ Unit}$$

Here loss % of the electricity reached to the peak in the year 2060/061 which is 36.49% and it comes to the layer in the year 2062/063 which is 30.80%.

❖ Sales and collection of electricity without street light

The amount of the street light should pay by the government NEA is the semi government organization. This is a part of the nation, so it is difficult for any branch to recover its due amount from street light. Therefore, while calculating collection %, debtors, A.C.P., the due amount from street light and sales amount of street light should minimize.

$$Collection\% \; X \frac{\text{Re}\,venue \;\; Collection}{Sales \; Z \, Sales \; to \; Street \; Light}$$

In the above report collection % of the branch is affected by the amount of street light. In 2057/058 collection % with street light is 99.48% when sales to street light is minimized it becomes 104.79%. So we can guess how the due affects the performance of the branch.

﹚ Stock turn over ratio

The stock turn over ratio of the branch is not so bad which is calculated by:

$$Stock \; Turn \; Over \; Ratio \; X \frac{Store \;\; Expenditure}{Stock \;\; Balance}$$

Here store balance is the balancing figure at the end the fiscal year and store expenditure is total expenditure of one fiscal year. In the F/Y 2057/058 S.T.R. is 0.856, 0.917 in F/Y 2058/059 and 0.83 in F/Y 2063/064 by the S.T.R. F/Y 2058/059 is best among 7 year because S.T.R. reached at the top which is 0.917 and worst in 2061/062 which is 0.709.

﹚ Other analysis

Besides these calculations some other reports should be submitted to show the performance of the branch such as Details of new connections, C.W.I.P. and Data management.

By this report every branch & distribution center are ranked on the basis of bench mark which is given by the management of NEA.

4.5 Major findings

The over all performance of NEA Jhapa according to the analysis is seemed to be more satisfactory. The basic problem can be found as following:

1. The current assets are not been used in the profitable manner: the excess of the current assets utilization has increased the opportunity loss.

2. More then 40% of the debtors are from street light. Which is UN recoverable? This amount has a bad effect on the performance of a branch.

3. There is heavy % of loss of electricity by which it minimized the profit of the branch.

4. The branch is not utilizing the total assets in the productive areas due to the destruction of political revenge. The big amount of property loss has been incurred in the past four to five years & it has affected the profitability of the branch.

5. The branch is not success to mobilize its human resource, there are about 148 employees in the branch but every activities move very slow.

6. The revenue collection is moving very smoothly, people have to pay Rs.100.00 for amounting Rs.80.00 So the branch should establish mobile counter.

7. Many consumer ledgers are destroyed in the violence during the year 2057/058. This makes very difficult to calculate total debtors of the branch.

8. The expenses incurred in the branch is also shooting boom, therefore it is not only influencing the profitability but also influencing to different turnover ratios.

9. However there are many obstacles, problems & difficulties the branch is trying its best to solve these types of problems and obstacles.

The major finding of this study as related in analysis are summarized here under:

1. Total assets turnover ratio indicates the organizations work efficiency during the study period. Sales revenue is increased each year. This shows the branch has used its fixed assets in generation of sales in a constant proportion. The firm is not efficient in generating proper sales by the total assets. Fixed assets turnover ratio of the branch is 0.45times on an average. The ratio is in increasing trend but not satisfactory. NEA Jhapa branch has lack of efficiency in utilizing of fixed assets in generating sales.

2. Debtors' turnover ratio of NEA Jhapa in fiscal year 2057/058 is 1.98 & 2058/059, 2059/060, 2060/061, 2061/062, 2062/063 & 2063/064 is 1.62, 1.50, 1.25, 1.15, 1.06, is respectively. It shows that in fiscal year 2056/057 DTR is high which indicates that shorter time lag to collect sales and remaining sampled years DTR is lower which shoes that debts are not being collected rapidly.

3. Average collection period of NEA Jhapa indicates inefficiency of the organization in collection of receivable. ACP is in highly

Increasing trend, which indicates the firm is failure to collects, its debtors.

4. Net profit margin on sales is fund in the range -0.311 to -0.66. In an average this ratio is -0.48. The indicates that the branch has been suffering from having losses during the seven year period.

5. Sales to power purchased ratio of the branch indicate very poor performance. The ratio is within 0.67 to 0.78 which says that there is heavy loss in sales of power because the ratio is in the increasing trend in the seven year period.

6. Collection to Sales Ratio of the Branch is not satisfactory; the ratio must be in increasing trend to show the good performance. Here the ratio lies "between" 0.99 to 0.85 in the seven year period. This says that the branch in unable to collect its revenue.

7. The percentage of sales of branch to total sales of NEA is 0.017 in the fiscal year 2057/058 and 0.010 in the year 2063/064 in comparison to total sales; the ratio of branch's sales is decreasing. However there is little improvement in F/Y 2058/059 but after then the ratio is not satisfactory.

8. Ratio of Branch's Revenue collection to Total revenue collection of NEA indicates the branch's work inefficiency during the study period. Collection revenue is decreasing each year in comparison to total collection. The branch is not efficient in collecting proper revenue collection.

9. Profitability is dependent upon capital employed, long-term debt & sales. Although the independent variables are important are result Specific profitability but their degree of contribution is different by nature which can is shown by correlation coefficients.

The correlation between sales and Collection, Sales & Debtors, is 0.85 & 0.95 respectively. This figures shows that there is high degree of positive correlation between these variables. It explains that even there is increasing sales; revenue collection has not increased satisfactory, meaning that the branch is not efficient enough to utilize its resources. The karl Pearson's correlation coefficient between Total sales & Jhapa branch's sales of NEA is significant because the correlation coefficient is more than six times the probable.

Correlation coefficient between Total collection & Jhapa branch's collection of NEA is 0.8010 & probable error is 0.09137. This figures shows that there is high degree of positive correlation between these variables. The value of probable error clarifies that the relationship between Total sales & branch's sales of NEA is significant because the correlation coefficient is more than six times the probable error. It explains that branch's collection is increasing in the same manner as a total collection is increasing in the same manner as a total collection is increasing. But the ratio of branch's sales to total sales is not 100% so we can say there is high degree of positive correlation. The over all performance of the branch is shown the PAP report. Different types of calculation have been made in the report. Every report indicates that the

branch is unable to show the better performance. However the no of consumer is highly increasing but the sales & revenue collection is not properly covered. Debtors are increasing rapidly, due from street light & due from heavy electricity loss, STR is not satisfactory. So the branch should improve its management, resources and other factors to establish itself in the competitive market.

CHAPTER – 5
SUMMARY, CONCLUSNON & RECOMMENDATION

5.1 Summary

The brief introduction of this study has been already presented in the first chapter. In the second chapter, the available literature about the performance of NEA has been reviewed. Research methodology has explained and analyzed in the fourth chapter.

This is a last chapter of this study. In this concluding chapter, an attempt has been made first t5o make present summary of the study, then conclusion of the analysis and some recommendation, which are useful to take corrective actions from the side3 of NEA.

Nepal Electricity Authority is a leading and sold corporation in power sector. It was incorporated on 1st Bhadra 2041 B.S. Under the Nepal Electricity Authority Act 2041, in order to make effective, dependent and economical production, transmission & distribution of electricity & to manage properly the electricity supply. The history of NEA is already reflected in the earlier chapter. The financial position of Nepal Electricity Authority as well as Jhapa branch has been analyzed by using various financial & statistical tools.

5.2 CONCLUSIONS

The study results conclude that there are some major problems affecting the financial performance of NEA Jhapa but some are general problems, which can be overcome with general considerations. Those problems, which were affection to a greater extent to the performance of NEA, Jhapa were included to those issues, which are affecting significantly to the performance to the branch.

There is on effective utilization of assets whether that is current or fixed. The branch has been seriously facing the problem of out-standing debt collection. There for account receivable has become burden meaning that average collection periods are also longer in each fiscal year. The branch has generated negative profitability throughout the study period has been observed. The capacity of assets in the generation of revenue is not satisfactory and the revenue is very low in comparison to the investments made. Increasing cost in each fiscal year is an important issue. It has not adopted the cost control tools and techniques. Electricity leakage, theft and wastage have been the major reasons reducing the profit earning capacity. Higher maintenance expenditure is being one of the vital factors to resulting less profitability or negative profitability.

To conclude this study, it may be appropriate to not note down the basic issues and constraints related to this study. Based on the conclusion drown from findings described above, the more important and basic issues and constraints are found in the following side.

1. Lack of well- planned & management

2. Weak utilization of resources

3. Lack Problems by political condition

4. Low level of budget

5. Higher burden of expenses

6. wide area have to covered

5.3 Recommendations

Based on the major findings of the study of the performance of Jhapa branch, some suggestions have been recommended in this part. It is hoped that these recommendation will prove to be useful to management of the branch.

1. NEA Jhapa has a large number of customers (about 36000) ranging from domestic, industrial to government and public undertakings. While serving to such large customer's NEA as well as the branch requires an efficient system of revenue collections so that revenues do not remain ties up in bill is receivable in the reductions of volume of profits. The collections system should treat equally to all customers & should not be influenced by political pressures. Revenue accounting should be given adequate importance like expenditure accounting by budget centre responsible personnel should be appointed to handle this section.

2. Most of the branch of NEA including Jhapa is suffering from unhealthy working conditions. I would like to suggest them to create a healthy working environment and environment of mutual trust & mutual co-operation.

3. It seems that the government directly or indirectly interfere the settings of strategic plans of NEA. For the improvement on performance, the interference should minimize. The board of directors should be free in setting the strategic as well as formulating policies.

4. NEA Jhapa branch become Jhapa distribution center the central management directly interferes the plans & rules of the branch. For the improvement on performance of the branch, the interference should minimize.

5. There should be continuous flow of information among various level of management and various groups of employee. The goal, objectives. Strategies should be carefully communicated to all staffs and employees.

6. However, numbers of staffs are increasing. All the staffs of the organization are not well trained which is the main reason for over staffing. Overstaffing creates automatically increase in unnecessary operational cost.

Diagram: Decreasing of operational cost.

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┌─────────────────────┐                              ┌─────────────────────┐
│ Re-Organization of  │                              │      Result:        │
│ different department│                              │ -Increase In Return │
└─────────────────────┘                              │ -Cost decreasing    │
          │                                          └─────────────────────┘
          ▼                                                     ▲
┌─────────────────────┐                              ┌─────────────────────┐
│ Over staff should   │                              │      Profit         │
│ transferred         │                              │   Maximization      │
└─────────────────────┘                              └─────────────────────┘
          │                                                     ▲
          ▼                                                     │
┌─────────────────────┐     ┌───────────────────┐   ┌─────────────────────┐
│ Trained Employee and│────▶│ Higher Efficiency │──▶│      Cost           │
│ Staffs              │     │                   │   │   minimization      │
└─────────────────────┘     └───────────────────┘   └─────────────────────┘
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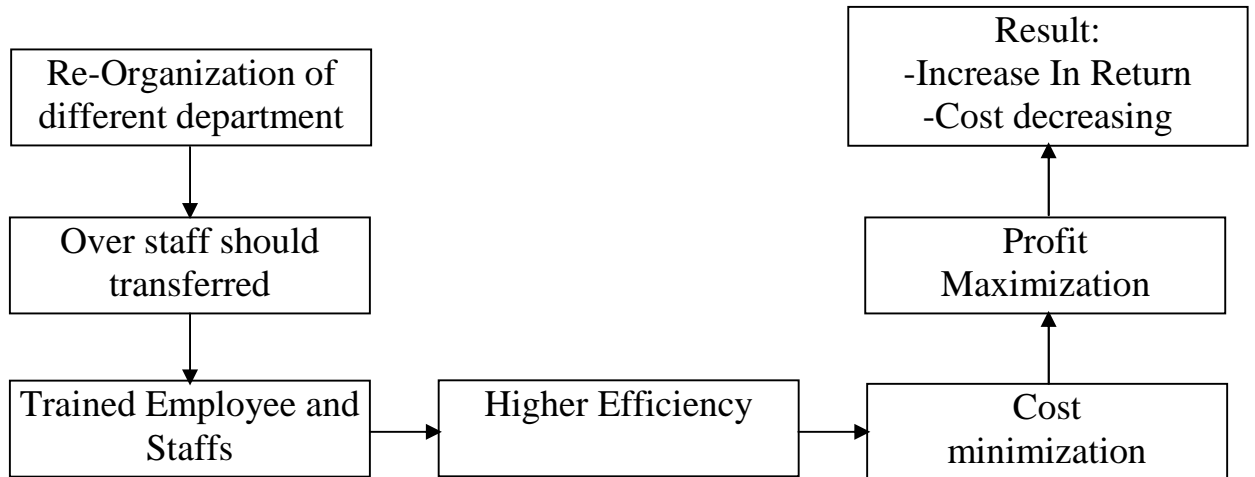
The branch should reduce its over staffing either by providing training opportunities to untrained man power or by hiring by providing training opportunities to untrained man power or by hiring skilled and well trained man power from outside. The branch must reorganize its personnel department and should stop entering of unskilled staffs. It helps to increase the benefits and incentives to the staffs that will increase their efficiently. As a result, it leads to the minimization of the operating costs and maximization of profits.

7. Collection of outstanding bills is serious problem of NEA; therefore, following efforts has to be made to collect the outstanding bills as soon as possible.

) Government offices are the main defaulters for increasing the outstanding bill therefore government should issue circular for all offices to pay their outstanding bill at a time. Billing should be made realistic through various collection measures such as encouragement of lump sum, payment through attractive discount, use of mobile collection center to the long distance customer, blacklisting of longer non-paying customer's immediate action likes disconnection to customer not paying in time, etc.

) Revenue accounting should be given adequate importance and responsible personal should be assignment to take up the charge of this section.

) Incentives & other facilities should give to those staffs who are directly engaged in the collection of outstanding bill, black listed costumer & electricity theft.

) Records & data should be up dated of those consumers who didn't pay the bill for long time. Those records should be managed in book ledger as well as in computer.

8. To increase the net profit the branch should be controlled the operating as well as non-operating expenses. There is in some unnecessary and wasteful expenses. There is possibility to bring down those unproductive expenses, if the management & staffs of the branch is to be more careful in cost factor.

9. It should reduce the loss arose out of leakage outage & theft of electricity.

10. Increase the volume of industrial sales of electricity.

11. The central level should undertake regular inspection & monitoring visit of budget centers.

12. Regular training should be arranged to impart he concept & knowledge of accounting to the accountants as well as to the chiefs of budget centers.

13. The ledger keeping should be modern it should be computerized. The branch is not serious in the case of the debtors the amount of total debtors is increasing if the branch is not does not take any action it will be very harmful.

14. Operating cost should be reduced it helps to reduced the loss of the branch.

Based on these recommendations, these guidelines would help in taking prompt decision in relationship between sales & revenue collection as well as the performance of the NEA Jhapa branch.

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Sales and Revenue collection

Appendix-I

No.	Fiscal year	Sales(X)	Revenue Collection(y)	Debtors (z)	X^2	Y^2	Z^2	XY	XZ
1	2057/2058	96824.58	96325.49	51218.63	9374999292.18	9278600023.74	2623348444.24	9326675112.54	495922701.99
2	2058/2059	100826.91	96326.50	62013.72	10166065780.15	8765921502.25	3845701293.36	9440076089.12	6252651623.04
3	2059/2060	109932.82	95228.11	73210.51	12085224913.15	9068392934.17	53659778193.17	10468694675.57	8048237381.50
4	2060/2061	115648.27	98077.07	91814.24	13374522353.99	9619111659.789	8429855425.16	11342443472.17	10618158494.99
5	2061/2062	115576.84	97223.56	100253.87	13358005944.39	9452420619.07	10050838321.65	11236791838.35	11587025418.40
6	2057/2058	121953.36	105256.20	115009.68	14872622015.29	11078867634.44	13227225886.45	12836347250.83	14025816586.57
7	2058/2059	129932.72	110697.97	122526.84	16882511726.60	12254040562.12	15012825765.62	14383288340.58	15920245194.01
		X= 790695.50	Y= 696434.90	Z= 616047.49	X2= 90113952025.74	Y2= 69517354939.58	Z2= 58549573329.66	XY= 79034311379.16	XZ= 71411357400.50

Source: NEA 2008, Jhapa

rxy=Correlation coefficient between X & Y

$$rxy = \frac{N \quad XY Z \quad X \quad Y}{\sqrt{N \quad X^2 Z(\quad X)^2 \mid N \quad Y^2 Z(\quad Y)^2}}$$

rxz = Correlation coefficient between X & Z.

$$rxz = \frac{N \sum XZ - \sum Z \sum XZ}{\sqrt{N \sum X^2 - Z(\sum X)^2} \mid N \sum Z^2 - Z(\sum Z)^2}$$

where,

r = correlation coefficient between two variables X & Y. &X&Z.

X = Sales

Y = Revenue collection

Z= Debtors

N = Number of observations.

Now,

Calculation of correlation coefficient between sales and Revenue collection of NEA Jhapa.

rxy = Correlation coefficient between X & Y.

$$rxy = \frac{N \sum XY - Z \sum X \sum Y}{\sqrt{N \sum X^2 - Z(\sum X)^2} \mid N \sum Y^2 - Z(\sum Y)^2}$$

$$rxy = \frac{7 X 79034311379.16 - Z 790695.50 X 696434.90}{\sqrt{7 X 90113952025.74 - Z(790695.50)2} X \sqrt{7 X 69517354939.58 - Z(696434.90)^2}}$$

$$rxy = \frac{553240179654.12 - Z 550667941472.95}{\sqrt{(630797664180.18 - Z 6251993720.25)} \sqrt{(486621484577.06 - Z 485021569938.01)}}$$

$$rxy = \frac{2572238181.17}{\sqrt{5598290459.93} X \sqrt{1599914639.05}}$$

$$rxy = \frac{2572238181.17}{2992789144.00}$$

rxy=0.8594

Since the value of are is 0.8594 we can say that it has a high degree of positive Correlation.

P.E.

We Know,

P.E.(r) $=0.6745 \times SE(r)$

$$=0.6745\,|\,\frac{(1\,Zr2)}{\sqrt{n}}$$

$$=0.6745\,|\,\frac{(1\,Z(.8594))^2}{\sqrt{7}}$$

$$=0.6745\,|\,0.101725$$

P.E.$=0.06861$

Since, the value of r is greater than 6 times the PE. It can be concluded that r is Definitely significance.

Calculation of correlation coefficient between sales debtors of NEA Jhapa

rxz=Correlation coefficient between X & Z.

$$rxz=\frac{N \quad XZ\,Z \quad X \quad Z}{\sqrt{N \quad X^2\,Z(\quad X)^2}\,|\,N \quad Z^2\,Z(\quad Z)^2}$$

$$rxz=\frac{7X\,7141135400.50\,Z790695.50X\,616047.49}{\sqrt{7X\,90113952025.74\,Z(790695.50)2X}\,\sqrt{7X\,58549573329.66\,Z(616047.49)2}}$$

$$rxz=\frac{499879501803.50\,Z487105978129.29}{\sqrt{(630797664180.18\,Z625199373720.25)}\,|\,\sqrt{(409847013307.62}\,Z379514509935.30}$$

$$rxz=\frac{127735236744.20}{\sqrt{5598290459.93}\,|\,\sqrt{30332503372.31}}$$

$$rxz=\frac{12773523674.20}{74821.72X\,174162.29}$$

$$rxz = \frac{12773523674.20}{13031122119.38}$$

rxz=0.9802

Since the value of r is 0.9802 we can say that it has a high degree of positive

Correlation

P.E.

we Know,

P.E.(r) $=0.6745 \text{xSE(r)}$

$$=0.6745 \text{x} \frac{(1 Z r 2)}{\sqrt{n}}$$

$$=0.6745 \,|\, \frac{(1 Z(.9802))^2}{\sqrt{7}}$$

$$=0.6745 \,|\, \frac{0.0292}{2.6458}$$

$$=0.6745 \,|\, 0.0148$$

P.E.=0.0099826

Since, the value r is greater than 6 times the PE. It can be concluded that r is Definitely

significant.

Total Sales of NEA, Jhapa

Appendix- II   (Rs. in million)

No.	Fiscal year	Entire NEA's Sales(x)	Sales of Jhapa Branch(y)	X^2	Y^2	xy
1	2057/2058	5396.80	96.82	29125450.24	9375.00	522542.89
2	2058/2059	5466.41	100.83	29881638.29	10166.07	551161.23
3	2059/2060	8160.80	109.93	66598656.64	12085.22	897139.76
4	2060/2061	9478.20	115.65	89798366.44	13374.52	1095906.14
5	2061/2062	11012.60	115.58	121277358.76	13358.01	1272801.51
6	2062/2063	11814.60	121.95	139584773.16	14872.60	1440830.17
7	2063/2064	12623.60	129.93	159355276.96	16882.51	1640218.68
		$\sum X$ 6.3951	$\sum Y$ 790.69	$\sum X2$ 635621520.5	$\sum Y2$ 90113.95	$\sum XY$ 7420600.37

Source: NEA 2008, Jhapa

rxy=Correlation coefficient between X & Y.

$$rxy = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \mid N \sum Y^2 - (\sum Y)^2}$$

Where,

r=correlation coefficient between two variable x & y.

x=Total Sales of NEA.

Y=Branch's Sales.

N=Number of observations.

Now,

Calculation of correlation coefficient between total sales and Kavre Branch' Sales of NEA.

rxy=correlation coefficient between X & Y.

$$rxy = \frac{N \quad XY \, Z \quad X \quad Y}{\sqrt{N \quad X^2 \, Z(\quad X)^2} \mid N \quad Y^2 \, Z(\quad Y)^2}$$

$$rxy = \frac{7 X 7420600.37 \, Z 63951.01 X 790.69}{\sqrt{7 X 635621520.5 \, Z(63951)^2} \, X \sqrt{7 X 90113.95 \, Z(790.69)^2}}$$

$$rxy = \frac{51944202.59 \, Z 50565424.09}{\sqrt{(4449350643.5 \, Z 4089731680.02)} \, X \sqrt{(630797.65 \, Z 625190.67)}}$$

$$rxy = \frac{51944202.59 \, Z 50565424.09}{\sqrt{(4449350643.5 \, Z 4089731680.02)} \, X \sqrt{(630797.65 \, Z 625190.67)}}$$

$$rxy = \frac{1378778.5}{\sqrt{359618963.48} \, X \sqrt{5606.97}}$$

$$rxy = \frac{1378778.50}{1419990.40}$$

$$rxy = 0.9709$$

Since, the value of r is 0.9709 we can say that it has a high degree of positive correlation.

P.E.

We know,

$$P.E.(r) = 0.6745 \, X SE(r)$$

$$= 0.6745 \quad X \quad \frac{(1 \, Z \, r2)}{\sqrt{}}$$

$$= 0.6745 X \frac{(1 \, Z(.9709)2)}{\sqrt{7}})$$

$$= 0.6745 X \frac{0.05735}{2.6458}$$

$$= 0.6745 X 0.02167$$

P.E. = 0.01462

Since, the value of r is greater than 6 times the PE. It can be conclude that is definitely significant.

Total Collection of NEA, Jhapa

Appendix- iii   (Rs. in million)

S. No.	Fiscal year	Total collection's of Nea's(X)	Collection of Jhapa Branch (Y)	X^2	Y^2	XY
1	2057/2058	5496.82	96.33	30215041.11	9278.60	5294833.98
2	2058/2059	7025.16	93.63	49352844.92	8765.92	657740.96
3	2059/2060	8377.83	95.23	70188069.02	9068.39	797805.11
4	2060/2061	9687.65	98.08	93850465.65	9619.11	950135.84
5	2061/2062	11237.49	97.22	126281203.98	9452.42	1092548.88
6	2062/2063	12055.24	105.26	145328690.91	11078.87	1268888.23
7	2063/2064	12968.44	110.70	168180332.29	12254.04	1435579.54
		$X =$ 66848.62	$Y =$ 696.43	X^2 X 683396647.86	Y^2 X 69517.35	XY X 6732182.52

Source : NEA 2008, Jhapa

rXY = correlation coefficient between X & Y

$$rXY = \frac{N \quad XY \, Z \quad X \quad Y}{\sqrt{N \quad X^2 \, Z(\quad X)^2 \mid N \quad Y^2 \, Z(\quad Y)^2}}$$

where,

r = correlation coefficient between two variables X & Y

X = Total Collection of NEA

Y = Branch's Collection

N = Number of observations.

Now, calculation of correlation coefficient between total collection and Jhapa branch's collection of NEA.

rXY = correlation coefficient between X & Y

$$rXY = \frac{N \sum XY - \sum X \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \, | \, N \sum Y^2 - (\sum Y)^2}$$

$$rXY = \frac{7 \, | \, 6732182.52 - 66848.62 \, | \, 696.43}{\sqrt{7 \, | \, 683396647.86 - (66848.62)^2} \, | \, 7 \, | \, 69517.35 - (696.43)^2}$$

$$rXY = \frac{47125277.64 - 46555384.4266}{\sqrt{(4783776535.02 - 4468737995.9044)(486621.45 - 485014.7449)}}$$

$$rXY = \frac{469893.2134}{711459.0835}$$

rXY = 0.810

Since the value of r is 0.810, we can say that it has been a high degree of positive correlation between total collections of NEA and branch's collection.

P.E.

We know

P.E. (r) $= 0.6745*SE(r)$

$$= 0.6745*\frac{(1 Z r 2)}{\sqrt{n}}$$

$$= 0.6745*\frac{(1 Z(0.8010)2)}{\sqrt{7}}$$

$$= 0.6745*\frac{0358399}{2.6758}$$

$$= 0.6745*0.135459$$

=P.E. $= 0.9137$

Since, the value of r is greater than 6 times the P.E. It can be

Conclude that r is definitely significant.

"The End"