A COMPARATIVE STUDY ON PROFIT PLANNING IN MANUFACTURING AND NON MANUFACTURING PUBLIC ENTERPRISES OF NEPAL

A Thesis

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Submitted to:
Office of the Dean
Faculty of Management
Tribhuvan University

In the partial fulfillment of the requirements for the degree of Master's in Business Studies (MBS)

Narayangarh, Chitwan
February, 2009

RECOMMENDATION

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A Comparative Study on Profit Planning in Manufacturing and Non Manufacturing Public Enterprises of Nepal

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DECLARATION

I hereby proclaim that the thesis work entitled "A Comparative Study on Profit Planning in Manufacturing and Non Manufacturing Public Enterprises of Nepal" submitted to Balkumari College, Faculty of Management, Tribhuvan University is my original work for the partial fulfillment of the requirement for the Master's Degree of Business studies (M.B.S.) under the supervision of Mr. Bhim Narayan Upadhyaya lecturer of Balkumari College Narayangarh Chitwan.

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ACKNOWLEDGEMENT

This thesis has been prepared as a partial requirement for the Master's Degree in Business Administration. All successful attempts are the result of contributions of some co-operative hands. This study is no exception either.

I have a great pleasure to express my deep sense of gratitude and deep respect to honorable lecturer Mr. Bhim Narayan Upadhayaya of Balkumari College, Narayangarh, Chitwan as my thesis advisor, who has guided me through out in this research work. I shall ever remain indebted to him for his valuable suggestions and directions. It was impossible to complete this research work without his inspiration and guidance.

I would like to express my gratitude and thanks to Mr. Shiva Prasad Poudel, Mr. Baburam Panthi, and Mr. Gunraj Chettri lecturer of Balkumari College, they always encourage and give an idea or valuable advice.

I would like to express my hearty thanks to my family member and friend Mr. Man Singh Tharu and Mr. Arun Pandit for regular inspiration, encouragement and continuous contributions for completion of this dissertation

Last but not least, I am also appreciate to Mr. Hari Adhikari of Classic Computer for their expert work in designing this into print and who have directly or indirectly helped in the exploration of the subject.

February, 2009

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ABBREVIATIONS

ACR	=	Administrative Cost Ratio
AG	=	Auditor General
AIC	=	Agriculture Inputs Corporation
BEP	=	Break Even Point
BER	=	Break Even Ratio
CBS	=	Statistical Pocket Book
CCC	=	Corporation Co-ordination Council
CEO	=	Chief Executive Officer
CM	=	Contribution Margin
CMR	=	Contribution Margin Ratio
CV	=	Coefficient of Variation
CVP	=	Cost Volume Profit
DDC	=	Dairy Development Corporation
DF	=	Degree of Freedom
FC	=	Fiscal Cost
FY	=	Fiscal Year
GDP	=	Gross Domestic Product
HMG	=	His Majesty's Government
KL	=	Kilo Litre
MOF	=	Ministry of Finance
MR	=	Management Review
NOC	=	Nepal Oil Corporation
NP	=	Net Profit
NPM	=	Net Profit Margin
NTL	=	National Trading Limited
PE	=	Public Enterprises
PMS	=	Profit Margin on Sales
RAP	=	Ratio of Actual Production/Purchase to Planned
RAS	=	Ratio of Actual Sales to Planned
RDL	=	Royal Drugs Limited
ROTA	=	Return on Total Assets
SD	=	Standard Deviation
T and P Report	=	Target and Performance Report
TRN	=	The Rising Nepal
VC	=	Variable Cost

CHAPTER ONE

INTRODUCTION

1.1 Backgrounds of the Study

Now, the world is getting preparation for the welcome of 21st century. In comparison of past, we improved in every sector by the help of science and new technology. Human civilization has got new height, specially, in the economic sector. The drastic changes have been seen. The agro-based economy is displaced by industry-based economy, which has created unimaginative wealth. Today, the first world country like America, Japan, and Europe there is no problem for basic needs, the living standard of the people is so high. In fact, industrialization has been god gift for their economy.

But in the context of third worlds country like Nepal, there is adverse situation, the whole economy is agro based. The technology used in production sector is traditional as a result the productivity is going on decreasing order. And in another hand, the population of these countries are multiplied day to day. There is no any effect of new technology which backbone of industrialization. From time to immemorial, the people of this country are fitting with the stone and the soil to grow crops, but they are unable to escape from hand to mouth problem. There is still main problem for the country is how to have a fast growth of national income, alleviation of poverty, and reduction of income inequalities.

Besides, some exceptional cases, neither government nor people themselves are able to establish the industries. After recent change of political trend, we have had more beautiful expectations. But the result, which we have got, is meaningless. According to our hope, it could not lead the economy. Economic change depends upon industrialization which is only one key factor of nations economic development. So, we are still seeking industrial revolution that leads the country towards golden future. Industrialization measures the value added

components in agricultural products and helps to transfer the labor force from agriculture to industries.

"By revolving large number of men and women from agriculture pursuits that had formed mankind's main occupation since the beginning of civilization and by introducing them to novel ways of working and living. The industries revolution transformed society". -According to Beuton William.

In the context of Nepal, industrialization is still in its infancy, with many major areas under public sector management. Industrial sectors have contribution in the national economy no more than 9.7 percent of G.D.P., and more than 81.3 percent of the people are still depend in agriculture for their livelihood.

Nepal is one of the least developed countries of the world having per capita income US $220. Population is growing 2.1 percent and unemployment rate is 4.9 percent. There is a greater challenge to the nation to eliminate the massive poverty in the country and provide basic needs to the people (CBS Year book, 1997, p. IV). Poverty is malice that a country like ours has been less than spectacular (TRN, Feb. 8, 1998). Today nearly half of the population is absolutely poor. The level of inequality between rich and poor has also been enormous reflected clearly by the Gini co-efficient value 0.53 (TRN, May 1, 1998).

Public enterprises are considered as the government's tools for bearing socio-economic responsibility. To modernize the country's socio-economic system on the perceptual grounds of development, economics and public enterprises bear the cost of development gestation. In this context, the public enterprises have been established to become the means of political relationships among the countries. Some are considered as the means of revenue generation for the government. Moreover, the generic significance of the establishment of public enterprises is to create the infrastructure for development and maintain public welfare and security where the private sector is not able to cover the area of low profitability and heavy investment.

Many public enterprises and private sector sell their products in the same market. The products also are of same type. In the later quarter of the twentieth century, the public enterprises were considered that they have to make profit by marketing their products and services. Public enterprises unable to make profits are considered as the burden for the economy, the stabilization is considered unjust in the course of entrepreneurship development in a national periphery. Therefore, the public enterprises should give market to their products and services as the private sector firms do in the competitive phenomena.

This will ensure the utilization of national resources more efficiently. But the Nepalese public enterprises are the simply burden for the national economy. This does not make a sense that public enterprises are worth privatization, but are instantly significant and are to be reformed. By utilizing available resource efficiently public enterprises can contribute to the national growth and prosperity. But in the case of Nepal, the situation is not so, up to 1992.

To contribute to the rapid economic development of nation, various PEs have been established in different fields like public utilities, manufacturing, trading, services, social and financial enterprises (MOF, T and P report of PEs 1998.) There are altogether 43 PEs in Nepal (Ibid). But their performance for discharging social obligations is poor as they have accumulated huge amount of losses (Agrawal, 1998:2). As per the AG's recent statement, 45 corporations have not had their accounts audited for the FY 2052-53 and 18 of them have not responded to the demand of AG's office for their reaction (TRN March 27, 1998). Hence, it is a matter of grave concern for such financial indiscipline in part of our PEs.

Modern business has taken the form of spider web. It has been developed so much in its nature and size that the global village concept has emerged. The concept of consumerism has made the managers socially responsible nor the consumers are unified against it. So the consumers have been suffering badly rather than getting served from them. It is all due to nothing but mismanagement. So this research in part B, has taken this form as tiny attempt to explore the achievement of profit planning aspects in Nepalese public enterprises.

1.2 Public Enterprises

Public enterprises are autonomous bodies which are owned and managed by the government and which provide goods or services for a price. The ownership with the government should be 51 percent or more to make an entity PE (Narain Laxmi, 1974:42). PEs are productive entities which are owned and or controlled by the state and the bulk of whose output is sold in the market place. They dominate important sectors in most countries i.e. infrastructure and heavy industries etc. They draw extensively on government budgets and often employ a large segment of the labor force. Their attempts to improve their performance are critical to the macro economics performance of most countries.

PEs play a vital instrument for the twin objective of social and economic development envisaged in national policy. Their objectives are aimed at creating the necessary infrastructure for developing the economy, establishing prices, maintaining a regular supply of essential commodities, import substitution, and export promotion and employment generation. To achieve these objectives PEs are endowed with more autonomy than government departments.

Nepal started its planned economic development in 1956 with the launching of first years plan. Since then the number of public enterprises have increased substantially in the various field of national economy (ASOSAI, 1998: 153).

1.3 Management of Public Enterprises:

Management is getting the things done through the people (Drucker, 1975:13). It is actually a practice. A business needs a disciplined execution methodology if people are to make the transition from work groups to teams (MR. June, 1998:56). Managers that present an environment that appeals to innate needs of self determination competency and relatedness their employees perform better (Ibid : 43). This task of manager if known as general management. As Andrews put "General management is the management of total enterprise or an autonomous sub-unit" (Andrews, 1978:2).

General managers hence are CEOs presidents, vice presidents etc. they are top level managers. Because they perform diverse nature of tasks at a time, they are the generalists and not the specialists. "Rather they are the movers form specialists" (Mr. March 1998:9). They see the big picture, they understand both vertical and horizontal integration and they bring "Real World" perspectives that are unhampered by parochial concern for decisions and department (Ibid).

A high positive correlation exists between the extent of managerial development in a country and the economic well-being of that country (Mee 1965: 18). "the developing countries are not underdevelopment rather they are under managed (Drucker, 1975:14). Actually, the sound management can help to develop the country by making efficient utilization of man, machine, material and money. The task of creating faith in the people about the worthiness of management is, thus, the greatest challenge to the present managers.

Management failure, poor management competence and management ineffectiveness are the common features of many organizations in Nepal (Pradhanang, 1996: 11). Adhocism and crisis management predominate the decision making (Gautam, 1983:40). Nepalese managers have not yet been professionalized (Agrawal, (1982:22). They do not feel to be concerned about increasing organizational effectiveness through effective decision making. Rather they are more concerned about safeguarding their chairs and promoting their self-interest (Ibid: 46). As Dr. Agrawal puts "Management has been the process of decision avoiding rather than decision making." This is evident from the following points which characterize the decision making process of Nepalese public enterprises (Agrawal, 1982:47).

a) Postponement for Bholi which never seems to come.
b) Formation of committees to pass the responsibility for decision making.
c) Managers are either action less yes men or abominable no men.
d) There is a practice of writing memos which travel upward and downward in the hierarchy frequently.
e) A look up syndrome is prevailing whenever a situation arises for decision making.

1.4 Brief Introduction of Selected Public Enterprises:

Nepal Oil Corporation (Noc)

Nepal Oil Corporation was established in 2027 B.S. under the company Act, 2021 as a state owned trading enterprise realized the need to institutionalize the supply and distribution of petroleum oil and lubricant (POL) products. Its objective is to ensure the smooth and uninterrupted distribution of petroleum products in the kingdom by negotiating with petrol exporting notions and by buying them from the soft market. It has got monopoly in the import and distribution of petroleum products. The refined petroleum, fuel bought in the way form foreign countries is brought to the seaports of Indian boarder and its responsibility is given to India oil corporation on the condition of receiving the same amount in the Nepalese border and distribute the throughout the kingdom by agents or by the corporation itself.

Dairy Development Corporation (DDC)

Dairy Development commission was formed in 1955 A.D. which ws later converted into Dairy development board in 1962 and finally, into the dairy development corporation (DDC) (1969) under a separate statute (1964). The objective of DDC has been to bring improvements in the production, processing preservation, sale and distribution of mild and milk products in a modern and scientific way, keeping in view the goals of promoting national welfare, maintaining production incentives to farmers and preserving consumers' health. With a view to enable Nepalese farmers by exchanging their dairy farming on a modern commercial scale, it was felt necessary to set up milk collection centres in Kathmandu valley to set up sales depots for hygienic milk, to set up cheese manufacturing units in the hilly regions and to set up ghee processing centers at important places in the tarai regions etc.

Royal Drugs Limited (RDL)

Royal Drugs Limited was established in 2029 B.S. (1972 A.D.) in the public sectors as an undertaking of His Majesty's Government of Nepal. Initially, it

was in the form of Royal Drugs Research Laboratory under the department of medicinal plants ministry of forest. Later on with the technical assistance of British Government, a separate production unit under the same laboratory was created which ultimately was converted into a company called Royal Drugs Limited in accordance with the company act, 2021. The major objectives of RDL is the manufacture standard quality medicines and supply them to the public at reasonable prices. Its other objectives are to meet the demand for medicines by utilizing various herbs available in different parts of the kingdom; to import necessary chemicals to produce medicines; and to undertake herbal farming to meet the company's need of raw materials, etc. Now a days, it has involved in producing all the essential drugs in the country and has concentrated on catering local demand and substituted the medicinal import to some extent.

Agriculture Inputs Corporation (AIC)

Agriculture inputs corporation (AIC) was established in 2022 B.S. under the corporation Act, 2021 to procure distribute high quality and improved agriculture inputs to the needed farmers at a reasonable price and on proper times. Initially, it was named Agriculture supply corporation (ADC); before its merging with food management committee under the new name Agriculture marking corporation (AMC); which was ultimately spilt into Nepal food corporation and Agriculture inputs corporation in 1974 for managing the agriculture inputs and marketing the agricultural produces of the country by selling and distributing the agricultural inputs in simple and systematic way. The major inputs it has been dealing with are chemical fertilizers, improved seeds of food crops, agriculture tools and crops preservation input (insecticides/ pesticides) etc.

National Trading Limited (NTL)

National Trading limited was established as a public limited company Act, 2021. Initially it was mainly engaged in handling the goods received under the commodity aid by His Majesty's Government form some friendly countries like

China and then Russia with a view to meet the local cost of development projects initiated by these countries through the sales of aid goods in the domestic market. Later on, it was made on deal with both the import and export aspects of foreign trade for the purpose of rendering support services to the economics development of the country. The current objectives of NTL are to be stabiles the price of products, to act as an trading agent of HMG and the price and to earn reasonable profit in return of HMG's investment. Now a days, is main function is to supply machinery and equipment, industrial raw materials, consumers goods and goods daily necessities regularly and reasonable price with a view to serve the needs of the people at large, on the one hands and also the needs of country's economic development projects as roads, buildings factories etc. by making available the construction materials and by making available the local expenses for different development projects from the proceeds of commodities aid.

1.5 Statement of the Problem

Industrialization is a major infrastructure for stable and reliable economic development. Industries can contribute to build infrastructure to supply goods and services. Thinking such a concrete etc, HMG has established a number of PEs in different sectors. But the financial performance of such enterprises in Nepal are quite dismal and have not been able to contribute towards the generation of surplus (Pathak, 2048). The rate of return from public corporation is less than 1 percent of government investment (TRN, Nov. 13: 1998). Less utilization of capacity, mismanagement, lack of integration of activities and lack of motivated skilled employees have become the main cause for the failure of such enterprises. Majority of enterprises prepare long range and short range plans, they are prepared on the adhoc basis (Pathak, 1985). The achievement of objectives if various enterprises, therefore, calls for not only the mobilization of resources but also the rational use of strategic planning which has set the stage for dynamic management planning on a continuing basis.

The present study has analyzed and examined the practice of profit planning selected PEs. Furthermore the study has tried to answer the following research questions.

1. Are the PEs under study able to enshrine the concept of profit planning?
2. What are the bases to make decisions on profit planning?
3. What are main hurdles to implement the profit planning concept in the PEs?
4. What are the measure to be taken to curb the hurdles seen in the PEs?
5. To what extent the participation of the employees of the PEs involved in profit planning?
6. Whether evaluation and monitoring devices are used to review the profit planning.
7. What are the major problems faced by the enterprises in developing and implementing profit plans?
8. What steps should be taken to improve the profit planning system in the public enterprises?

1.6 Objectives of the Study:

The basic objective of the present study is to highlight the current practice of profit planning and its effectiveness in Nepalese public enterprise. This broad objective has been further specified in following sub-objectives.

a) To disclose the information about whether PEs are able to implement the concept of PPC.
b) To identify the base to make decisions on profit planning.
c) To identify whether the participatory approach is used for PPC.
d) To evaluate the disbursement financial budget related with PPC.
e) To evaluate the major problems faced by the enterprises in developing and implementing profit plans.
f) To takes steps for improving the profit planning system in the public enterprises.

1.7 Significance of the Study:

This study may be the first in its kind. So far, no study like the present one has been conducted in the context of Nepalese corporation. Earlier some case studies, however, have been made by the students in the field of profit planning. But, they do not represent the more comprehensive comparison among them. Thus, there is a need to compile the profit planning aspects of corporations and computer their trends. The present study not only fulfills this gap but also compares the manufacturing and non-manufacturing corporations.

The irregularities that are existing now due to the weaknesses that were made by the prevailing planners have to be corrected. So to perform this important task the concerned authorities and the enterprises should be made aware of what should be made to happen in future. Viewed in this light, this study which intends to enligjten the prevailing planning phenomena is justifiable. It will help the enterprises to identify how far patterns of planning aspect have been in conformity with management philosophy. On the basis of foregoing information the enterprises can identify their strengths and weaknesses in respect of profit planning. This will be of great help to develop and improve the efficiency of the enterprises. Needless to say, such knowledge helps the concerned authority to rectify the weaknesses if any subject matter.

The role of the public sector in underdevelopment country is rather limited compared to developed countries. Even then the study of profit planning behaviour in the public sector corporation of a country like Nepal is important for several reasons. Firstly, the public sector is still large so knowledge about the corporations as a representative member of an important sector a few year hence; secondly, in so far as there are reasons to believe, on a priori ground, that the behaviour of incorporated and unincorporated corporation is similar, the study of the profit planning behaviour of the former, on which the data to some extent, is available, will give an idea about the behaviour of latter also; and thirdly the corporate sector is more sensitive and more amenable to monetary control measures. So it can be seen why the profit planning behaviour in the public sector corporations is likely to be of great significance.

1.8 Limitation of Study:

The main concern of this study is to uncover the present managerial status in term of their profit planning. So, this study is naturally confined to the planning aspect. The second limitation of the study is that it covers only five year period from FY 2059/60 to 2063/64 so the conclusions drawn as according may not be analogous to that of more comprehensive analysis. The third limitations of it is it studies only five enterprises and the results inferred are of a tentative nature. So, a firm generalization should be a avoided for the overall enterprises.

The present study has also been hampered by several problems and constraints cropping up in course of its preparation. Information's and data relating to the study have not been available to the required extent. Besides this, due to the various constraints posed by inadequacy of time and human and financial resources a wide stratified sample could not be drawn which have also precluded the study from the inclusion of complete enumeration.

1.9 Scheme of the Study

This work consists of two main parts. The first part deals with the background of research. The second part, which is actually the research part starts with the discussion of introductory perspective of PEs, statement of problem, objective of study, and other fundamentals in chapter I, while chapter II is devoted to conceptual framework, the research design, the sample, and the setting of hypothesis have been included in chapter III. The presentation and analysis of data which is the main body of research work is the subject matter of IV. Chapter V involves in analysis of more comprehensive comparison. The last chapter i.e. chapter VI includes summary and conclusion of the discussions and the analysis done in other chapters of this work.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

Management is getting the things done through the people (Drucker, 1975:13). Management is the agency through which most change enter our society and it is the agency that then must cope with the environment it has set in turbulent motion (ways, 1978; 122). Management requires different conduct with different people rather than uniform conduct (Davis and Bloodstream, 1975: 100). Managerial role is a multiplier role as the competence of a manager affects the performance of all the personnel working under him (Gupta, 1977:6). The manager plans the work of those for whom he is responsible, he organizes their activities, he motivates them and integrates their activities, he audits the results in order that he may re plan if necessary, reorganize and better motivate those for whose work he is responsible (Frandline. 1963: 160). Thus, the managers can better invest their energy of teamwork.

According to a recent study, more executives are working longer hours today than they did five years ago. It reinforces the principle that is a strong work ethic, not luck, that is required to succeed at the management level in most companies (MR March 1998:9). Another study shoes the CEOS are much less interested in play and after hour activities than are other executive groups it means the CEO views are much less interested in play and after hour activities than are other executive groups. It means the CEO views as play and play a waste of time (Ibid).

2.2 Top Management Planning Process

Top management refers to the strategic level of management where thereafter degree of uncertainties and ambiguities must be faced (Agrawal. 1982: 87). In

the recent years the role of general management has explained to include the external environment in the nation of integration (Karn, 1985:3) "The top management planning process refers to a conscious search for synergy" (Gimore and Brandenberg, 1978: 143) i.e. 2×2 = 5 concept of affinity between search areas of changes and the present positions to the firm (Anseff, 1978:22). Because change is opportunity, there are enormous opportunities in the environment (Drunker, 1993:350). Those opportunities are to be matched with internal strengths of the firm. The CEO is responsible for defining what business the form if in and matching the best use of the enterprise resources " The value system of top managers (reflected by attitudes towards risk taking versus risk averting, concentration versus diffusion if corporate control and the like) also affects dominantly the strategic analysis of the enterprise" (Karn, 1985,26). Hence, conceptual skill is the essence of this level (Agrawal, 1982:7). As Drucker, the veteran of management put we live in a very turbulent time not because there is so much change but because it moves in so many different directions. In this situation, the effective executive has to be able to recognize and run with opportunity to learn and constantly to refresh the knowledge base (Drucker, 1993:351).

2.3 Concept of Profit Planning

2.3.1 Profit

A business form is an organization designed to made profits and profits are the primary measure of its success. Profits are the excess of income over cost of production (Joshi 2050:170). Profit in the accounting sense tends of becomes a long-term objective, which measures not only the success of a product but also of the development of the market for it (Kulkarni:245). They are the acid test of the individual firm's performance (Dean Joel, 1992:3). The total assets minus reserves and liabilities constitutes net worth, the year to year change in which is annual income (Ibid, 5). Usually, profits do not just happen. They are managed (Lynch and Williamson, 1989:99). Using the account's measuring stick,

management thinks of profit as a tangible expression of goals it has set for the firm, a ,measure of the performance towards the achievement of its goals, a means of maintaining the health, growth, and continuity of the company (Ibid:100).

2.3.2 Profit Planning

Profit planning of budgeting is forward planning and involves the preparation in advance of the quantitative as well as financial statements to indicate the intention of the management in respect of the various aspects of the business. Profit planning, in fact is a managerial technique and a business budget is such a written plan, in which all aspects of business operations with respect to a definite future period are included. It is a formal statement of policy, plan, objective and goal established by the top management in respect of same future period. It acts as a business for the period covered. Profit planning is a predetermined detailed plan of action developed and distributed as a guide to current operations and as a partial basis for the subsequent evaluation of performance. Thus, we can say that profit planning is a tool, which may be used by the management in planning the future course of actions and controlling the actual performance (S.P. Gupta, 1992:521). Profit planning and control means the development and acceptance of objectives and goal and moving an organization efficiently to achieve the objectives and goals (Welsch, 1984:4). It has the ultimate objectives of attaining the optimum profit (Keller, Isac and Ferrara, 1966:388).

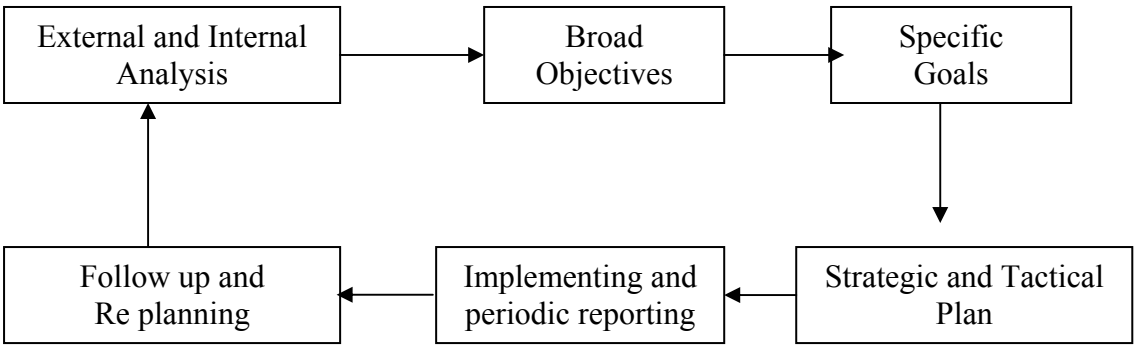
In summary, the budget involves the statement of plans the co-ordination of these plans into well balanced programs, and the constant watching of actual operations to ensure that they are kept in lines with predetermined plans. In this way, limits are set on expenditure, standards of performance are established and forward thinking is made as an essential part of the business management (Willsmore, 1960:9).

2.3.3 Process of Profit Planning

Planning begins with the setting of general goals, proceeds to the cost volume profit analysis of various alternatives and ends with the preparation of a detailed quantitative plan of action the budget (Lunch, 1989:142). The budget in turn provides a motive and guide to action for all responsible managers in all segments of the firm. When the results of actual performance become available, they are tabulated and compared with the budget for purposes of highlighting off-standard performances as a basis for instituting corrective action (Ibid). Hence, planning involves the step of setting objectives specifying goals, formulating strategies and expressing budgets as well as appraising the performance. Welsch and his friends opine planning process includes the following five phases: (1) Establishing enterprise objectoves and goals, (2) developing premises about the environment of the entity, (3) making decisions about course of action, (4) initiating actions to activate the plans, and (5) evaluating performance feedback for replanning (Welsch, Hillton and Gordon, 1992:5). This a typical framework of profit planning process can be exhibited as under.

Figure No. 2.1

Framework of Profit Planning



Source: Welsch, 1992:30

Hence, a comprehensive profit planning process involves the following phases.

- Development and application of broad and long range objectives of the enterprise.
- Specification of enterprise goals.

- Development of a strategic long range profit plan in broad terms
- Specification of a tactical short rang profit plan detailed by assigned responsibilities (division, departments, projects)
- Establishment of a system of periodic performance reports detailed by assigned responsibilities.
- Development of follow-up procedures.

A profit planning programme can be one of the more effective communication networks in an enterprise. Communication for effecting planning and control requires that both the executives and sub-ordinates have the same understanding of responsibilities and goals (Ibid. 58).

Profit planning is, thus one of the most important devices that plays key role for the effective formulation and implementation of strategic as well as tactical plans of the organization. It requires the effective co-ordination among various functional budgets of an organization.

2.3.4 Fundamentals of Good Profit Planning:

The concept of planning horizon is an important factor in profit planning. It refers to the period of time in future for which management should plan. Two concurrent profit plans typically are developed one strategic (long rang) and one tactical (short range). The strategic plan is for more years in future. The tactical profit plan is detailed and encompasses one year time horizon for the upcoming years (Wekschm 1992:32). Short rang profit plans are prepared being based on the long range profit plan, Therefore, short rang profit plans should be in consistency with the long range profit plans.

a) Planning Horizon

The concept of planning horizon is an important factor in profit planning. It refers to the period of time in future for which management should plan. Two concurrent profit plans typically are developed-one strategic (long range) and one tactical (short range). The strategic plan is for more years in future. The tactical profit plan is detail and encompasses one year time horizon for the p

coming years (Welsch, 1992:31 – 32). Short range profit plans are prepared being based on the long range profit plan. There fore, short range profit plans should be in consistency with the long range profit plans.

b) Forecasting

The statements of expected future conditions are forecasts. The need of forecasting is increasing as management attempts to decrease its dependence on chance and becomes more scientific in dealing with its environment. Since each area of an organization is related to all others a good or bad forecast can affect the entire organization (Markidakis and wheelright 1985:5). A large number of forecasting methods are available to management today. They range from the most native method such as use if the most recent observation as a forecast to highly complex approaches such as econometric system of simultaneous equations (Ibid:3).

c) Managerial Involvement

Managerial involvement entails managerial support, confidence, participation and performance orientation. For it, all levels of management especially top management, must (i) understand the nature and characteristics of profit planning (ii) be convinced that this particular approach to managing is preferable for their situation (iii) be willing to devote the effort required to make it operative, (iv) support the programme in all its ramifications, and (v) view the results of the planning process as performance commitments (Welsch, 1984:30).

d) Full Communication

There must be full communication of the plan from the topmast level to the lowest level of the organization. A profit planning manual is normally desirable to enhance the communication, specify procedures and provide reasonable stability in the operation of the system. A profit planning manual should include the following. (Welsch 1992: 92-93).

1) Statement of objectives of the profit planning programs.
2) Procedures to be followed in developing profit plans.
   - Operating executives
   - Staff executives
   - Top management budget commitee
3) A profit planning and control calendar that specifies completion dates for each part of the profit plan and for the submission of reports.
4) Distribution instructions for profit plan schedule.
5) Instructions and procedures with respect to performance reports.
   - Responsibility and procedures for preparation of reports
   - Actual results
   - Budgeted data and variance
   - Analysis of variance

   b) form, content of and procedures for performance report.

   c) Distribution of instruction for performance report.
6) Procedures for taking corrective action on variances.
   a) Unfavorable variance
   b) Favorable variance
7) Follow-up and re planning procedures.

e) Realistic Expectation

In profit planning, management must be realistic and avoid being either unduly conservative or irrationally optimistic. To be realistic, expectations must be related i) to their specific time dimension, and (ii) to an assumed (projected) external and internal environment that will prevail during that time span . Within these two constraint, realistic expectations should assume a high level of overall efficiency however, the objectives and goals should be attainable. Goals that are set so high that they are practically impossible to attain discourage serious efforts to reach them. Alternatively, goals set so low that they require no special effort will provide no miotivation (Welsch, 1992:53).

f) Behavioural Implication

How to set budgetary expectations affects the working people to a greater extent. One effect is that employees may consciously strive not to exceed budgeted performance in order to lessen the likelihood that the budgeted performance level will ultimately be set even higher. Another effect is that they generally form informal groups gradually as employees realize that others also feel the budgetary pressure and that such pressure can be partially relieved by discussing it with others in a group (Welsch 1992:54). Hence, budget goals should be established on a participative basis and implemented n ways that provide positive reinforcement (i.e. positive motivation) rather than negative motivation. To accomplish this difficult task, management must consider consequences with 'can't do and won't do' attitudues, 'can't do' often means more attention needs to be given to employee training and facilities 'wont's do' usually means that the consequences of doing it should be reevaluated (positive rewards, challenges, pride, status etc.) The objective is to provide maximum motivation to excel by the individual managers the operational units and the overall enterprise (Welsch, 1992:53)

g) Management by Exception

A comprehensive profit planning programme involves reporting (i) actual results, (ii) budgeted or planned results, and (iii) the differences (performance variations) between the two. This type of reporting represents an effective application of the will recognized management exception principle. The exception principle holds that the manager should concentrate primarily on the exceptional or unusual items that appear in daily, weekly and monthly reports, there by leaving sufficient managerial time for overall policy and planning considerations. It is the 'out of line' items that need immediate managerial attention to determine the causes and to take corrective actions. The items that are not out of line need not utilize extensive management time; however, they should trigger rewards in appropriate ways (Welsch, 1992:45).

2.3.5 Development of Profit Plan

A) Sales Plan

A comprehensive sales plan includes interrelated strategic (long term) and tactical short term) sales plan. It includes the following components. Management guidelines, sales forecasts and other relevant information and plan of marketing, advertising and distribution expenses.

B) Production Plan

When the sales plan is completed next step in building the short range profit plan for a company is to develop a production plan. It is the based on the sales forecasts. The production plan involves determining the number of units of each product maintain the planned inventory level of finished goods planning production requirements necessitates another decisional input, that is the management decision about inventory levels of finished goods that are to be planned (Welsch, 1997: 136).

This production budget is based on the capacity of plant and the requirement of sales plan. The main objective of the production plan is to fulfill the sales plan requirements. So that before, we develop the production following formula should be remembered units to be produced = total requirement for sales + ending inventory - opening inventory.

C) Planning of Material and Parts

This budget specifies the planned quantities of each raw material and part required for planned production. It should specify quantities of each raw materials and parts of time product and responsibility center.

The basis inputs required to develop the direct materials and parts budget are:

a) Volume of output Planned (from the production plan)
b) Standard usage rates by type raw material and parts for each finished product. Material usage rates are applied to the production data (from the production plan)to develop the material and part budget.

D) Planning of material and parts purchases

The material and parts budget specifies the quantities and timing of each raw material and comment part needed. Therefore, a plan purchase must be developed. The purchase of parts budget specifies the planned quantities of materials and parts to purchased, the estimated costs and the required delivery dates.

Raw materials to be purchased = Raw material consumption during the period
+ inventory change of raw material.

$$\text{Planned unit purchase price} = \frac{Total\ Cost\ of\ Purchase}{Unit\ of\ Purchase}$$

The material and parts budget in direct responsibility of the purchasing manages to the knowledge able in respect to the market for the material that he must purchase , therefore it is his responsibility to provide protected unit material cost for uses in the purchasing budget.

E) Planning of Direct Labour

For the annual profit plan, the direct labour budget should be developed by responsibility centers interim periods and product. The direct labour budget includes the planned direct labour requirements necessary to produce the types and quantities of output planned in the production budget.

The approach used to develop the direct labour budget depends primarily on the:

- Methods of wage payment
- Types of production process involved
- Availability of standard labour time
- Adequacy of the cost accounting records relating to direct labour costs.

F) Planning of Direct Labour Hours

Internal conditions will determine whether it is feasible to relate planned production in a producing development to direct labour hour (production hour)

as well as to direct labour costs. Similarly, Internal factors will determine the most practicable approach for planning direct labour hours.

For commonly used approach is planning standard labour time may be outlined as follows:

- Time and motions studies
- Standard costs
- Direct estimated by supervisors
- Statistical estimates by experts group

G) Planning of Distribution Expenses

Distribution expenses include all costs related to selling, distribution and delivery of products to customers. On sales planning we indicated these three steps were involved.

- Development of a promotion and advertising plan.
- Development of a selling expenses plan, marketing plan.

The market plan represents the planned sales upon which the project plan is built.

H) Planning of Research and Development

Research and development plays a vital role in many modern businesses concerns of substantial size. Problems involved in predetermining authorizing and controlling research and development expenses and similar to those encountered in the use of capital expenditures. However, there is a basic distinction between the two while capital expenditures always produce something tangible. Thus, a business concern must plan to incur research and development expenses with is a reasonable limit and a satisfactory portion of it should produce tangible benefit (Gupta, S.P.:551).

I) Planning Factory Overhead (Expenses)

In building the overall manufacturing plans and after developing the production plan expenses budget must be established for each responsibility center in the factory. Those expenses budgets must be detailed by interim time periods

(months, quarters) and by the three categories of costs: direct material, direct labour ands manufacturing overhead. After the production plan is completed these cost budget normally are developed simultaneously and are then consolidated into a budget appropriately labeled the planned cost of manufactured. The later budget requires that all factory cost be identified either directly or by allocation for each product.

J) Planned Administrative Expenses

Administrative expenses include those expenses other than manufacturing and distribution. They are incurred in the responsibility centers that provide supervision of and service to all functions of the enterprise, rather than in the performance of any one function.

In a company's general administration developments designated as: administrative, accounting (including director of profit plan) and torchbearer etc. The head of each of those developments submitted and expenses budget for consideration is and approved by the financial vice president.

K) Inventory Budget

At this point the company executives have planned the costs for the factory function, now the information is available develop the planned rupees values of the inventories for:

- Raw materials
- Work in progress
- Finished goods

A manufacturing enterprise may followed to first out cost, last in first out cost and weighted average cost flow method policy for inventories. A manufacturing enterprise may followed to first out cost, last in first out cost and weighted average cast flow method policy for inventories.

L) Financial Plan

Financial budget reports about the estimated receipts and payments which facilitate the correct estimate of working capital. It may include projected statement of affairs and projected income statement on the basis of which it is determined as what cash balance would be at the end of the budget period. This budget also helps the owner or cashier of the business operations during a definite future period. Financial budget includes monthly cash budget and capital expenditure budget (Gupta S.P., 1992:551).

i) Cash Budget

A cash budget shows the planned cash inflows, outflows and ending position by interim periods for a specific time span. Most companies should develop both long term and short term plans about their cash flows. The short term cash budget is included in the annual profit plan. A cash budget basically included two parts: (1) the planned cash receipts (inflows), and (2) the planned cash disbursements (outflows) (Welsch, 1992:433).

Two primary approaches are used to develop the cash budget. One is the cash receipts and disbursements approach. This method is based on a detailed analysis of the increases and decreases in the budgeted cash that would reflect all cash inflows and outflows from such budgets as sales, expenses, and capital expenditures. It is often used for short term cash planning. The other approach is financial accounting approach, The starting point in this approach is planned net income shown on the budget income statement which is converted from an accrual basis to a cash basis. It is useful for making long range cash projections (Ibid, 435).

ii) Budget of Capital Addition

The capital addition budget includes such items as planned extension of plant, new building extraordinary repairs that are to be capitalized, building programmes, machinery requisitions and other capital additions. The budget of capital addition that is included in the short range profit plan present that

specific portion of the long range capital edition plan that will materialize clearing the up coming year. The budget of capital addition included in the annual profit for a company was assembled by the financial vice president and his staff.

M) Planning of Non-Manufacturing Concern

Instead of converting raw materials into finished products a merchandising business purchase goods and resells them in essentially the same form. A non-manufacturing business would not develop budgets converting production raw material purchase, direct labour or manufacturing overhead. Alternatively, non-manufacturing companies focus on the merchandise budget (Welsch, 1984:565). However, the effective profit planning for wholesale and retail companies the same basic procedures as for manufacturing companies.

a) The development of realistic profit plan.
b) Continuous effect to assure attainment of the goals to be expressed in the profit plans.
c) The development of a control system based on performance report for the various responsibility centers.

i) Merchandise Budget

The term merchandise budget is frequently used in non-manufacturing situation. It usually includes planning of sales, reduction, mark downs, employee discounts, stock shortage, purchases and gross margins. (Ibid. 567)

Planned Purchases = Planned Net Sales + Planned Reductions + Planned EOM Stock – Planned Boom Stock

ii) Purchase Plan

The following formula is usually employed to compute the required purchases at retail values.

Planned Purchases = Planned Net Sales + Planned Reduction + Planned EOM Stock – Planned Boom Stock.

iii) Open to buy Planning

Open to buy is a term generally used in non-manufacturing enterprises to refer to that amount that a budget can spend for goods during a specified time period (Welsch, 1992: 259-259)

Open to Buy Format

S.NO.	Particular	Amount	Amount
A	**Needed Stock**		
1	Planned EOM stock		
2	Planned sales for the month		
3	Less: Actual sales to date		
4	Planned ending delivery		
5	Less: Actual reduction to date		
6	Total needed stock		
B	**Available Stock**		
1	Stock to date		
2	Bom stock		
3	Add: Actual purchase to date		
4	Less: stock on order for delivery		
5	Add: stock on order for the period		
6	Total stock available		
7	Open to buy at retail (A-B)		
8	X cost multiplies (1-markup)		
9	Open to buy at cost (7 ×8)		

2.3.6 Implementing the Profit Plan

After the completion and distribution of plan, as series of profit plan conferences should be held. The top executives comprehensively discuss the plans expectations and steps in implementation. At this top level meeting, the importance of action flexibility and continuous control should be emphasized. In particular, each manager must understand that the budget is a tool. The profit

plan, regardless of how well designed and how carefully developed, can not manage. In the final analysis, people not budgets (or other similar tools), perform the management functions use of the profit plan as a guide to action and performances directed towards attaining or budgeting the goals quantified in the annual profit plan, requires continuous management effort and attention (Welsch, 1992:471).

In designing and implementing a profit planning program the following steps are recommended (Ibid., 632).

1) Appoint a high level management committee to provide brad recommendations.
2) Analyze the internal environment based on factual studies.
3) Conduct economic feasibility studies.
4) Specify the broad objectives the program.
5) Specify management responsibilities in planning and controlling
6) Decide on the basic budgetary approach.
7) Select appropriate concepts techniques and approaches.
8) Plan the implementation system.
9) Institute budget education.
10) Establish procedures for monitoring the system to ensure its appropriateness and to provide for improvements.
11) Establish guidelines to ensure effective utilization of the system by all levels of management.

2.3.7 Importance and Limitation of Profit Planning

A) Importance of Profit Planning

Modern profit planning encourages desirable action and reorganizes the divisional and departmental autonomy and responsibility of managers, motivating them to strive for attainment of their personal objectives (matz, Curry and Usry, 1985:72). Profit plans if developed through full participation and in harmony with assigned responsibilities, assures a degree of

understanding not otherwise possible (Welsh, 1984:111). It predicts future with reasonable precision and removes uncertainty to a greater extent (Pandey, 1986:254). It creates the felling of co-operation and understanding between different departments of the business; sits responsibilities of employees utilization of material, labour, capital and other resources with a view to ensure maximum return; pinpoints efficiency and inefficiency: rewards high performance and seeks to correct unfavorable. Performance; instills at all levels of management the habit of timely, careful and adequate consideration of the management to take necessary steps for getting satisfactory results (Welsch, 1984:60).

B) Limitation of Profit Planning:

The main limitations of profit planning are as under (Welsch 1992:61)

1. It is based on estimates: the profit plan is based entirely on estimates and judgments. This aspect of budgeting should always be kept in view while interpreting the results there of.
2. It must be continually adapted: To fit changing circumstances profit planning should be tried, improved or discarded and replaced with. So management must expect too much especially during the formative period.
3. Execution of profit plan is not automatic.
   It will be effective only when all responsible executives exert continuous and aggressive effort towards their accomplishment.
4. It is not substitute for management: profit planning can not substitute for management. It is only a system that can aid in performing management. So it is totally misconception to think that the introduction of budgeting is alone sufficient to ensure success and to guarantee future profits.

2.3.8 Major Tools of Profit Planning

A) Budgetary Analysis

Budget is the quantitative expression of the goals the organization wishes to achieve and the cost of attaining those goals (German and Duckman, 1976:128). The budget is a detailed quantitative expression of management's plan for the nears future (Hynch aand Williamson 1989:166). It is a

comprehensive and coordinated plan, expression in financial terms, for the operations and resources of an enterprise for some specified period in future (khan and jain, 1993:296). As Necener pats, a budget is an intelligently prepared estimate of the future business conditions (Neumer, 1958:531). The targets so set up under budgetary system are such that, they can be directly compared with actual performance and the difference if any can be traced to an individual person who is responsible for the difference (Swaminathan, 1978:352).

Budget promotes a feeling of cost consciousness and restricts expenditure to the minimum (Swaminathan, 1978:353). The use of budget gives direction and controlled effect to the management of a business, because it sets goals for attainment instead of leaving results to chance (Ruswickel & Lawrence, 1955:377) Budgeting is they helpful in developing a team work which is very much needed for the very success of an organization. It is necessarily to co-ordinate the activities of different departments and to control the performances of various persons operating at differential levels (Jain and Narang 1987:2).

The starting point of budget is production or sales. If the limiting factors are concerned with production i.e. machine capacity, material availability, labour procurement or restricted working how's,then the budgeted activity level bases on production capacity. Similarly, if the limiting factors are concerned with demand. i.e. sales price quantity or the sales areas, them the budgeted activity level bases on sales of the product (Swaminathan, 1987 : 356). Production cost budget, personnel budget and works overhead budge (Ibid. p. 362)

a) Material budget: Budgeting of raw materials involves (1) determining the quantity and cost of raw material needed to meet the production schedule , (2) establishing the desired level of raw material inventory, and (3) Preparing a purchase budget (Jacobson and Backer, 1964: 473).
b) Labour budget: The estimate of man-howl required for certain period of time is labour budget (Ibid.) Hence it helps to avoid over manning and undermining in the company.

c) Manufacturing overhead Budget: That part of production cost budget which is not directly traceable to specific products or jobs. It consists of (1) indirect material, (2) indirect labor, and (3) all other miscellaneous factory expenses such as taxes, insurance, depreciation, supplies, utilities, repairs etc. (Welsch, Hilton & Gordon, 1992:307).

The budgetary analysis is thus a part responsibility accounting. It is so in the sense that each department or section is made responsible to achieve the budgeted goal specified for that's particular department or section. It is also a part of management by exception in the sense that the inefficient section or department is found out through performance report and the focus of management is concentrated on such department of section to avoid the inefficiency. The budget performance report for this purpose, give top management a basis for evaluating the effectiveness of line management in controlling costs (Lynch, 1989:197). Hence, budgetary analysis in an important tool for controlling costs.

B) Marginal Costing and BE Analysis

Variable (marginal) costing is a method of recording and reporting costs which regards as product cost. Only those manufacturing's costs which tend to vary directly with volume of activity (Lynch, 1989:256). Under this method fixed costs are not allotted to cost unit but are written off against profits in the period in which they arise (Shukla and Grewal, 1970:151). By placing emphasis on contribution margin, the technique of marginal costing offers a simple as well as clear portrayal of the relationship between specific product cost and the different possible selling prices being considered (Goyal and M, 1990:176). In recent years, there is an increasing acceptance among industries to use variable costing as a tool of profit planning (Khan and Jain, 1993: 660). This is due to the fact that contribution margin is unaffected by the allocation of indirect cost (Goyal and M, 1990:176). Hence the advocates of marginal costing feel that the apportionment of fixed cost to production is unsound (Bigg 1963:234).

Cost volume profit analysis is concerned with how profit is determined by sales volume, sales price, variable expenses and fixed expenses (Gray and Rickette, 1982:392). The break even point for an operation or business is that volume at which the excess of sales revenue over the variable cost equals the fixed expenses (Spectries, 1963:208). Break even analysis focuses on the break even point (Welsch, 1984:531) in other words, the "no profit no loss point is break even point or a point at which losses cease and profits begin (Khan and Jain, 199:700). Thus, break even analysis refers to a system of determining two thing a) that level of operation where total revenues equal to total cost i.e. the point of zero profit and ii) the probable profit at any level of operation (Goyal and M, 1990:188). Break even analysis helps significantly in this respect. Profits can be increased either by minimizing cost or by increasing the sales in terms of units or price, Hence, "cost volume profit analysis can be used to determine cost, prices and the sales volume needed to achieve a target profit (Gray and Rickette, 1982: 409).

C) Flexible Budgeting

Flexible budget is a method of budgeting for cost control which permits allowed cost to be adjusted to attained level of volume (Lynch and Williamson, 1989:221). A flexible budget that is prepared for a range i.e. more than one level of actively (Jawaharlal, 1996: 929). This means that the total variable costs will be adjusted upwards or downward in accordance with the rise or fall of attained volume, while fixed cost will stay about the same, within a given range of activity Lynch and Williamson, 1989:239). The fundamental concepts of flexible budgets for expenses is that all expenses are incurred because of (a) the passage of time, (b) out put or productive activity (Welsch, Hilton and Gorden, 1992:343). It is clearly more appropriate to have a budget allowance based on the fixed cost plus the variable cost per unit multiplied by the units produck (Bhattachary and Dearden, 1966: 579). The usefulness of flexible budget depends vary largely on the accuracy with which the expenses can be classified under fixed, semi fixed, and variable (Swaminathan, 1978: 354).

Such a budget is prescribed in the following case (a) where the level of activity during the year varies form period to period, either due to the seasonal nature of the industry or to variation in demand (b) where the business is a new one is difficult to forecast the demand, and (c) where the under taking is suffering form shortage of a factor of production of production such as materials, labour, plant capacity etc, (Jain and Narang, 1987:26-27). The merit of using variable budgets, rather that fixed budgets, for control purposes is thus apparent when one recalls that some overhead costs are a function of activity i.e. they vary with activity, while other overhead costs are a function of time (Backer and Jacobson, 1964:168).

D) Analysis of Management Ratios

The management ratio are those which are linked to sales, profits and assets of a business (Jain and Naramg, 1987: 32.9). The ratios worked out and useful to the extent that the comparison reflects the earning capacity, return on capital employed, earnings on fixed assets, liquidity, growth etc, of the business V/S-a-Vis others and on the basis of this information it can act for future improvement (Ibid., 32.11). Some of the useful ratios are cost ratios, profitability ratio and capacity attainment ratio.

1. *Cost Ratios:* Daily business operations involve many problems in which decision must be made on various cause of action and cost are commonly a factor to be taken into account in marketing these decisions (Nickerson, 1962: 601). Management would like to determine cost ratios to find out how they are doing in relation to others as regards to the cost of production (Jain and Narang, 1987: 32.11) as completion becomes more keen cost ratios will assume greater importance for the simple reason that cost reduction will become a compelling necessity (Ibid). Hence, for effective planning of business the cost structure of products Viz. material cost, labour cost and overhead etc. can be studied in term of cost ratios.

2. *Profitability Ratios:* Profitability ratios are calculated to enlighten the end result of business activities which is the sole criterion of the overall efficiency of a business concern (Jain and Narang, 1991:V1/28). Following are the important profitability ratios.

    a. *Net Profit Margin (NPM):* This is the ratio of profit before forces to sales expressed as a percentage (Pradhan, 1986). It is very useful to the proprietors and prospective investors because it reveals the overall profitability of the concern, higher the ratio the better it is.

    b. *Return on Total Assets (ROTA):* It is the ratio of net profit before taxes to average total assets of the firm (Pradhan, 1986). It is calculated to measure the profit before tax against the amount invested in total assets to ascertain whether assets are being utilized properly or not (Jain and Narang 1991).

2.4 Review of Related Research

No systematic study seems to have been done so far in respect the present research though there have been a great many researches in the field of marketing accounts and finance. There are not sufficient published documents available in this field. Under such a circumstance the study has taken its shape. However, there have been some individual case studies can studies made with reference to profit planning aspect of some enterprises. Therefore the review of related literature will be confined to those studies only. Because of the studies having some bearing on the problem of the study, their brief review will be done in this section.

One of these works (Parajili, 1991) is devoted to examine the applicability of profit planning in Nepalese manufacturing public enterprises taking sample of DDC and BLSF. He has explored seven years data form Fy 2038/39 to 2044/45 and found that both the enterprises are adopting profit planning on an unrealistic premises. He has concluded that though the sampled enterprises

were making profit to some extend the prevailing resources were inefficiently utilized.

Another study (Ojha, 1995) is devoted to evaluate and highlight the current practice of profit planning and its effectiveness in Nepalese public enterprises through the analysis of Herb production and processing center and Royal Drugs Limited. He found that the there is centralization of planning system and lack of adequate skill to them who are at the principle of the enterprises. He recommended that the trained and qualified manpower should be hired for developing the profit plan and suggests - tapism in implementation, and government intervention through unnecessary rules and regulations should be avoided.

Another study (Neupane, 1995) is characterized by a comprehensive study on profit planning and control in manufacturing public entireness of Nepal by examining the aspect of Himal Cement Company Limited. The data explored were from 2044/45 to 2049/50. He found lack of adequate planning and entrepreneurial concept in the top management level and recommended concept in the top management level and recommend that the negligence in the implementation should be minimized as far as possible.

Another study (Paudel, 19896) intends to examine the profit planning practices of Himal Cement Company and Hetaunda Cement Industries Limited. He found that both enterprises have to effective and systematic plan. They have prepared only the product and sales targets on the basis of hunch. Though the enterprises are suffering seriously form excessive fixed cost, they are not sensitive towards cost reduction. He recommends that the enterprises should prepuces the plans more deliberately, and the should be inclined to cost reduction.

Mr. Wagle, Pujan (2006) has submitted a thesis on the topic of "A case study of Profit Planning and Control in Nepal Food Corporation"- a public enterprise in which he has pointed out the following major findings and recommendation based on the profit planning and control. The major findings are a) Though the

objectives underlying the establishment of PE- NFC were ambitious, performance has not matched expectations. b) NFC is financially very weak and its financial condition is becoming more and more unmanageable. c) NFC doesn't have any long range and medium range forecasts, forecasting mechanism of past experiences and personal judgment of the managers. d) Regular financial appraisal is absent. No financial efficiency indicator has been identified. e) Though the enterprise has planning division but it has no skilled and expert planner as well as budgeting experts. Budgets are prepared on traditional basis. f) Burden of loan is pending. g) Poor planning and forecasting of expenses budget leads higher allocation of administrative expenses. h) Staff promotion process has been closed and old staffs are not ready to go to hilly area because of the age and security problem. i) The operating position of NFC is not good. The major cause of lower or negative profit is because of high fixed cost i.e. administration costs and cost of sales. j) Most of the financial ratios of the corporation are unsatisfactory. The low assets turnover ratio, current ratio, return on assets shows very poor status and higher ratio of debt equity ratio shows the NFC more levered.

His major recommendations are a) NFC should prepare flexible budget in different level and cost volume profit analysis should be developed for managerial decision making, especially cost control and profit planning. b) To improve the profit pattern, NFC should develop profit plan formulation and proper implementation of it. c) There is no detail sales plan, so NFC should prepare the strategic long range and interim sales plan and it should help in developing performance report and taking corrective action for re-planning. d) NFC must maintain the cash flow statement due to which position of cash is to be cleared. There is little expectation of profit if there is a clear cash structure of NFC. e) The low assets turnover ratio indicates that NFC needs to reevaluate strategies, marketing efforts and capital expenditure programme. e) Reducing administration expenses, timely auditing, financial discipline and full utilization of capacity are the most important challenges that had to overcome to renovate the corporation. f) Various study and research has been done to make strong financial position. Among them, according to economic development and productivity center; utilization of fixed assets and its proper

commercial uses in different sectors (like to make shutter, complex, investments in current assets) are the advices to make strong financial status.

The government should make legal framework and create sound environment for growth of public enterprises and industries. It should give necessary direction and guideline to the corporations. But in practice they are not accepting these factors. They do not hesitate to interfere in operational matters like staff promotion, recruitment, training, nomination, transferring, etc. an executive chief appointed by minister always obey the order.

Mr. Tharu, Man Singh (2006) has submitted a thesis of the topic "Profit Planning and Control, A Case Study of Nepal Telecom". his main objectives of the studies are a) To highlight the NTC in different aspects. b) To analyze, examine & interpret the financial position of NTC. c) To analyze various functional budgets adopted in NTC. d) To suggest the suitable suggestion or recommendation for improving performance. And his main findings of this study are a) NTC's sales achievement meets approximately the sales target in every year. This shows that NTC is planning proper sales budget. b) The management of NTC is not good success to utilization of their current assets properly since it has more than 4 times than its current liabilities. c) Customer service and line maintenance service is not satisfactory. d) NTC is operating in profit but it is not gaining satisfactory on monopoly situation of NTC. e) NTC fails to maintain its periodic performance report systematically, goal and objectives are centralized in urban areas. f) This time mobile service is started and it is very famous in communication. This service is very popular these days. g) The corporation has no proper practice of segregating cost into fixed and variable.

The main recommendations of his study are a) the plan of NTC should be analysis on the basis of performance of corporation ability. b) Installation capacity of NTC is not fully utilized but the demand of Telephone line is higher. If installed capacity is utilized, the opening expenses will be gone down. c) To improving profit planning system. NTC should be applied systematic profit planning and overall performance of its own. d) The center level should undertake regular inspection and monitoring of budget sector. e)

The financial position of the corporation should be timely evaluated through ratio analysis and other relevant financial and mathematical tools. f) NTC should be expanded its activity in rural areas to provide do the service to general people and fulfill its basic objectives. g) General managers or executive directors should be appointed for some long period and right person should be placed at right place. h) Management by Objectives (MBO) technique should be followes by planning to maintain co-ordination, co-operation and self-motivating among departments and employees.

2.5 Research Gap

The research study is mainly concerned with the profit planning in manufacturing an non-manufacturing public enterprises of Nepal.

There is the gap between this research and previous researchers. Most of the previous research studies were found there is decentralization of planning system and lack of adequate skill, lack of trained and qualified man power, cannot achieve target production, sales and cost reduction. This study may be the first in its kind. So far, no study like the present one has been conducted in the context of Nepalese corporation. Earlier some case studies, however, have been made by the students in the field of profit planning. But, they do not represent the more comprehensive comparison among them. Thus, there is a need to compile the profit planning aspects of corporations and computer their trends. The present study not only fulfills this gap but also compares the manufacturing and non-manufacturing corporations.

Here, tried to disclose the information about whether PEs are able to implement the concept of PPC., to identify the base to make decisions, to identify the participatory approach is used for PPC, to evaluate the disbursement financial budget, to evaluate the major problems faced by the enterprises in developing and implementing profit plans and how to take steps for improving the profit planning system in the public enterprises of Nepal.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

It is well known fact that PEs are established for rapid socio-economic development of the country. Different PEC have different sets of object. PEs have maintained proper balance between profit motive and service motive profit oriented manufacturing and non-manufacturing public enterprises should have to employ profit planning programs to run competitively and smoothly in more competitive business environment.

Research methodology is the ways to solve systematically about the research problem (Kothari, 1990). The basic question that this research work attempts to answer is how much the public enterprises are conscious towards their planning competence for the enhancement of their profitability. For this purpose following methodology has been applied which includes research design, sources of information and tools employed.

3.2 Research Design

The formidable problem that follows in the task defining the research is the preparation of design of the research project popularity known as research design (Pathak, 1980). Research design is a plan to obtain the answer of research questions through analysis of data. In order to make analysis this work will use primary as well as secondary data. For the purpose of gathering primary data some questionnaire set. The corporations under study will be visited and the top managers interviewed to find out their responses regarding the questionnaires. The secondary data have mostly been gathered from the financial statements published in the annual report of the corporations. The various issues of the report contain the audited balance sheets and profit and

loss accounts of the public corporations. Some information's have also been acquired from the profiles of public enterprises in Nepal published by the CCC.

Both the descriptive and analytical methods have been applied to proceed on this study. Descriptive method has been used for reviewing past practices and present trends of profit planning. Analytical research design has been adopted for testing the different hypothesis.

3.2.1 Research Methods

Both the descriptive and analytical methods have been applied to proceed on with the study, descriptive methods has been used for reviewing their past practices and present trends individually. Analytical research design has been adopted for testing the different hypotheses so as to make their study comparatively.

3.2.2 Hypothesis

The hypothesis set for the fulfillment of the objectives set this study is, Ho: There is no significant difference between the achievement of manufacturing and non-manufacturing enterprises.

3.3 Sources of Information

Information if the life blood of any research. Together the information data collection is major task.

3.3.1 Type and Collection of Data

This work will use primary as well as secondary data. For the purposes of gathering primary data some questionnaires have been set. The enterprises under study have been visited and the top managers interviewed to find out their responses regarding these questionnaires. The secondary data are mostly gathered form the published and unpublished documents from T.U. centre library Kirtipur, CEDA library Kritipur, and from reference section of central Department of Management T.U. American Library and British council library are also referred. There has also been the reflective utilization of the related

articles published in professional journal and the leading magazines and newspapers of Nepal, India and other countries. A part from the regular publication, the occasional paper presented in seminars, the various documents of the different research institutes have also been consulted, and telephone contact.

3.3.2 The Sample

The samples are selected on the basis of judgmental approach. For the purposes of conducting this study five enterprises in public sector have been chosen. They are Royal Drugs Limited, Dairy Development Corporation, National Trading Limited, Nepal Oil Corporation, and Agriculture inputs corporation. Among them two enterprises are manufacturing publics enterprises and the other three are non-manufacturing (trading) public enterprises. The five year accounting data commencing form the FY. 2059/60 enterprises. The five year accounting data commencing from the FY. 2059/60 to the FY 2063/64 have been selected as a sample. It is because at the time of conducting this study, the most recent audited data available were up to FY 2063/64 only.

At present, there are 43 public corporations operating in Nepal inclusive of both the manufacturing and non-manufacturing pubic corporations. In order to select the corporations for the purpose of this study first of all a list of corporations have prepared. Of the 13; manufacturing corporations; two corporations have been selected for this study. Similarly, among the 30 non-manufacturing corporations; three corporations have been selected. Thus; the corporations selected for this study represent 15% of the corporations established in manufacturing sector and 10% of the non-manufacturing sector as shown below.

Sector	N	n	n/N (%)
Manufacturing	13	2	15
Non-Manufacturing	30	3	10
Total	43	5	12

Source: CCC, MOF 2056

Note: N = Number of corporations

n = number of corporations selected for the study

The above table also shows that the corporations selected for the study represent 12% of all the corporations.

3.4 Tool Used

3.4.1 Financial Tools

Crude data collected through the above mentioned sources and procedures are compiled planned and further analyzed. Various tools have been used to present the collected facts and figures such as tables, diagrams and statistical tests etc. The tools considered for the analysis are as follows:

a) Budgetary Analysis
b) Breakeven Analysis
c) Flexible budgeting
d) Management ratios

3.4.2 Statistical Tools

By using these various tools the achievement of different enterprises under study are first analyzed individually. Then, all of them are comprehensively compared through the use of unvaried analysis. In this type of analysis a comparison is made between the parameters of manufacturing corporations and those of non-manufacturing corporations. The comparison will facilitate the determination of the difference between the parameters of two groups of corporations. Under unvaried analysis each ratio is examined individually for the two groups. The parameter depends on the comparison of the mean value of each of these parameters for the two groups. The mean value of each of these parameters for the two groups. The mean values are computed in each of the corporations and for each of they years. Students T-values are computed in order to test whether the difference between the parameters of the two groups in statistically significance or not.

The t-value is calculated as $\frac{\overline{X_1} - \overline{X_2}}{SD} \sqrt{\frac{n_1 n_2}{n_1 + n_2}}$

Where,

$\overline{X_1}$ = The mean of the first group, $\overline{X_2}$ = The mean of the second group

n_1 = Number of observations in the first group

n_2 = Number of observation in the second group

SD = Combined standard deviation

$$SD = \sqrt{\frac{\sum(X_1 - \overline{X_1})^2 + \sum(X_2 - \overline{X_2})^2}{n_1 + n_2 - 2}}$$

Where,

$\sum(X_1 - \overline{X_1})^2$ = sum of squares of the deviations taken form the mean of the first group

$\sum(X_2 - \overline{X_2})^2$ = sum of squares of the deviations taken form the mean of the second group

The degree of freedom is calculated as $n_1 + n_2 - 2$. If the calculated value of t is greater than the table value, the difference in the mean values of the parameters is statistically significant.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

The primary purpose of profit planning is to increase the chances of making profit in the enterprises. It involves the central and adjustment of relevant variables controllable and non-controllable and reduces the impact of uncertainty to obtain the desired profit.

4.1 Analysis of Planned Sales and Achievement

Sales are the primary source of cash and all other functional budgets are prepared on the basis of sales budget. Following tables present the picture of sales target i.e. sales target and sales achievements from the fiscal years 2059/060 to 2063/64.

Table No. 4.1

Sales Plan and Achievement of Nepal Oil Corporation

(In KL)

Fiscal Year	Plan	Actual	Achieved %	Change %
2059/060	457664	459639	100.43	-
2060/061	511201	528925	103.47	3.02
2061/062	581809	582369	100.10	-3.26
2062/063	665344	635396	95.50	-4.60
2063/064	761622	732685	96.20	0.73

Source: NOC, Babarmahal

The Data Period Covered on the frame of only five period of fiscal year 2059/060 to 2063/064 B.S. Sample taken from those corporation which establishment period is more than 10 years.

Table No. 4.2

Sales Plan and Achievement of Dairy Development Corporation

(in 000 Ltrs)

Fiscal Year	Plan	Actual	Achieved %	Change %
2059/060	49907	44405	88.97	-
2060/061	50021	48592	97.16	9.21
2061/062	52514	53198	101.30	4.26
2062/063	58267	56972	97.78	-3.47
2063/064	60266	55084	91.40	-6.52

Source: DDC, Lainchaur

Table No. 4.3

Sales Plan and Achievement of Royal Drugs Limited

(In 000 Rs.)

Fiscal Year	Plan	Actual	Achieved %	Change %
2059/060	16000	86668	54.17	-
2060/061	165000	97145	58.87	8.68
2061/062	170000	124857	73.45	24.77
2062/063	170000	119223	70.13	-4.52
2063/064	170000	127389	74.93	6.84

Source: RDL, Babarmahal

Table No. 4.4

Sales Plan and Achievement of Agriculture Inputs Corporation

(in MT)

Fiscal Year	Plan	Actual	Achieved %	Change %
2059/060	129348	77843	60.18	-
2060/061	134235	94341	70.21	16.67
2061/062	131286	73701	56.00	-20.24
2062/063	101787	68258	67.10	19.82
2063/064	84559	49339	58.35	-13.04

Source: AIC, Kuleswor

Table No. 4.5

Sales Plan and Achievement of National Trading Limited

(in 00,000 Rs.)

Fiscal Year	Plan	Actual	Achieved %	Change %
2059/060	11036	9221	83.55	-
2060/061	16751	10058	60.04	-28.14
2061/062	14458	9094	62.90	4.76
2062/063	14750	7611	51.60	-17.96
2063/064	10100	7862	77.84	50.85

Source: NTL, Teku

From the above tables it is clear that the actual sales have varied in different years. Table 4.1 shows the actual sales of NOC is around the target figures. It is more than that of target in FY 2059/060, 2060/61 and 2061/062. But it has declined in the FY 2062/63 and 2063/64. On an average the actual sales achievement of oil is 99.14 percent. The actual sales increased by 3.02 percent and 0.73 percent in the FY 2060/061 and 2063/064 respectively. But it decreased by 2061/062 and 2062/063 respectively.

Table 4.2 shows the actual sales of DDC is around the target figures. It is more than that of target in FY 2061/062. But it has declined in the FY 2059/060, 2060/061, 2062/063 and 2063/064. On an average the actual sales achievement of milk and milk product is 95.32%. The actual sales increased by 9.21% and 4.26% in the FY 2060/061 and 2061/62 respectively. But it is decreased by 3.47% and 6.52% in the FY 2062/63 and 2063/064 respectively.

Table 4.3 indicates the sales achievements of RDL are always below the targets. Actual sales are only 66.31% of average target figure. It implies that targets are set at high expectation. Moreover, the sales achievements are in consistent from year to year. In FY 2060/061, 2061/062 and 2063/064 it has increased by 8.68%, 24.77% and 6.84% respectively whereas the same has decreased by 4.52% in FY 2062/063.

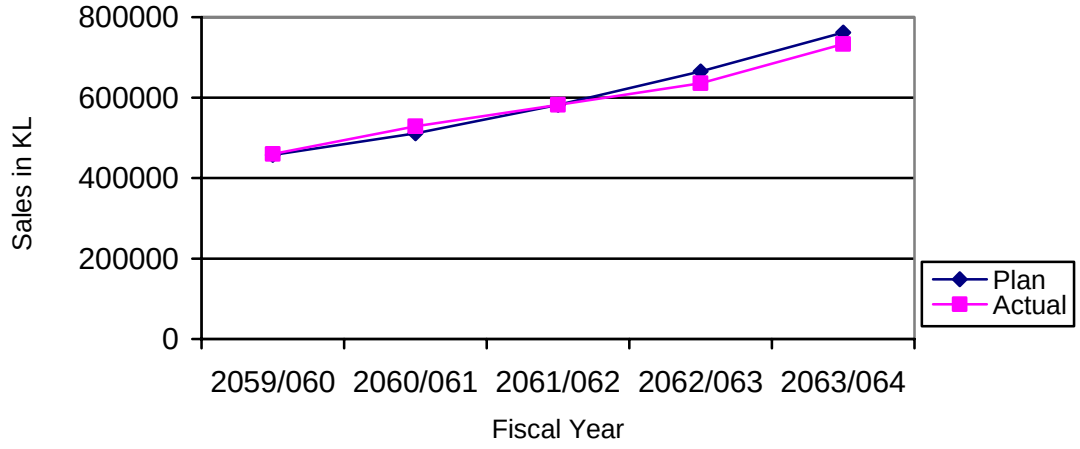
Table 4.4 shows the sales achievement of AIC are always below the target figure. Actual sales are only 62.37% of average target figure. It ranges from minimum 56% in FY 2061/62 to maximum 70.21% in FY 2060/61. The achievement has declined in FY 2061/062 and 2063/064 by 20.24% and 13.04% respectively.

Table 4.5 shows actual sales of NTL figures are always less than the planned ones. The average sales achievement is 67.19% the average target figure. It ranges from minimum 51.60% in FY 2062/63 to maximum 83.55% in FY 2062/63. It has increased by 4.76% and 50.85% in FY 2061/062 and 2063/64 respectively whereas the same has decreased by 28.14% and 17.96% in FY 2060/061 and 2062/063 respectively.

The above tables can lucidly be presented in the form of figures. The following are the figures to reveal the sales plan and achievement of different enterprises in a more effective manner.

Figure No. 4.1

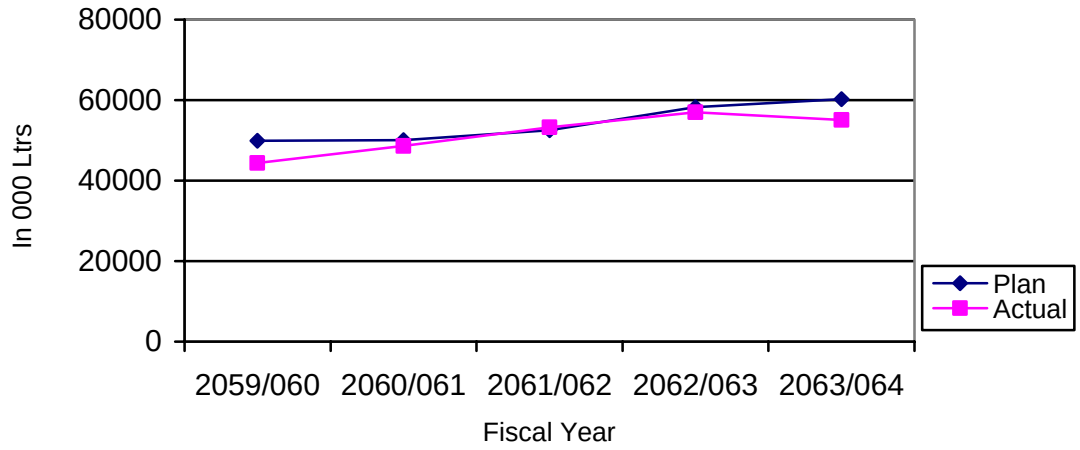
Sales Plan and Achievement of Nepal Oil Corporation



Source: Table No. 4.1

Figure No. 4.2

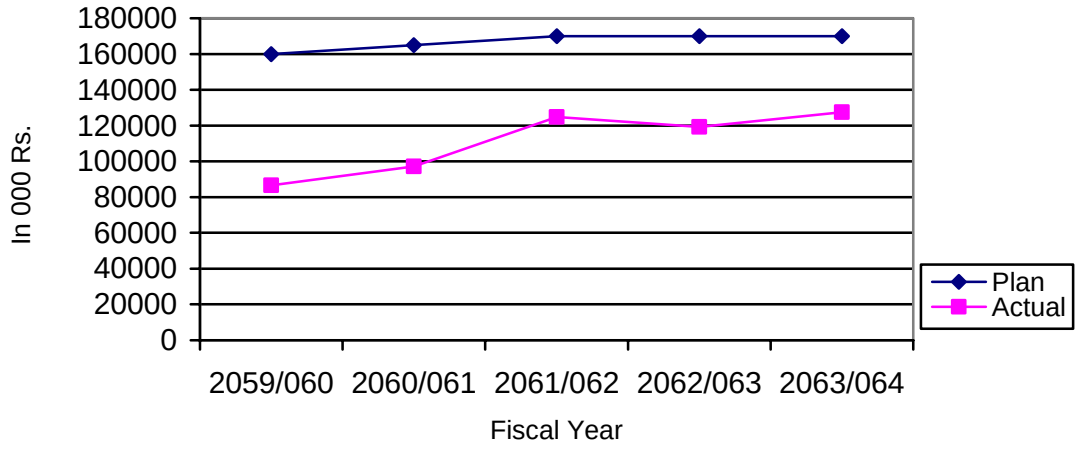
Sales Plan and Achievement of Dairy Development Corporation



Source: Table No. 4.2

Figure No. 4.3

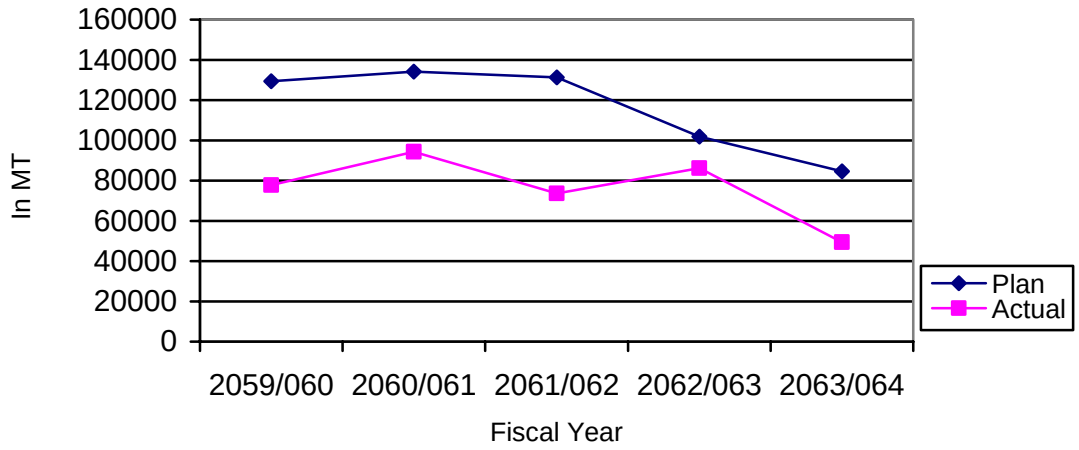
Sales Plan and Achievement of Royal Drugs Limited



Source: Table No. 4.3

Figure No. 4.4

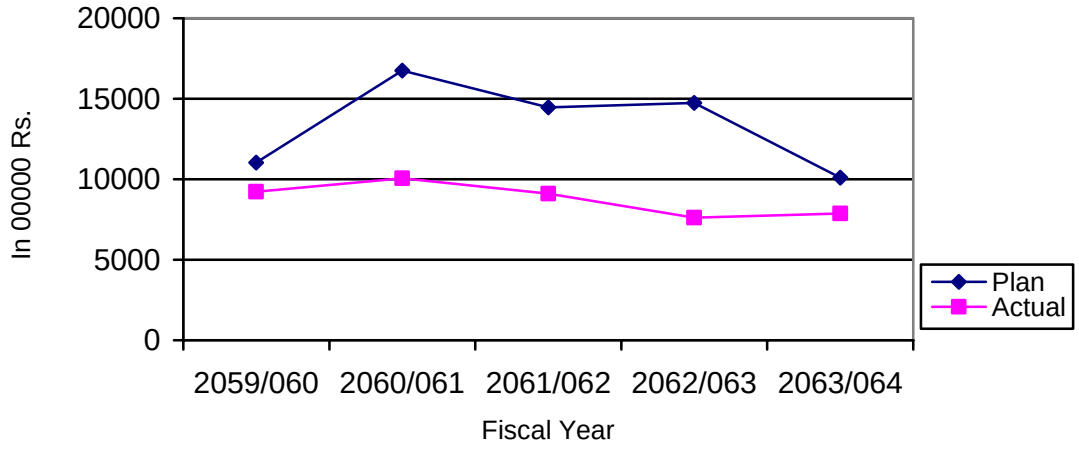
Sales Plan and Achievement of Agriculture Inputs Corporation



Source: Table No. 4.4

Figure No. 4.5

Sales Plan and Achievement of National Trading Limited



Source: Table No. 4.5

From the above figures, it is clear that the plan and achievement of sales both are in increasing trend and achievement has been increased with that of its planned figures in each and every year for the two enterprises-NOC and DDC. In these enterprises the gap between budgeted sales and actual sales is very small and if there is, it is not remarkable. But in other three enterprises the

actual sales are always below the planned figures. The distance between the planned and actual trend line are being wider in every year hence, which ultimately obviates that either the planned figures are set on adhoc basis or the lack the proper implementation.

In order to find the nature of variability of budgeted and actual sales of different years, arithmetic mean, standard deviation and coefficient of variation are to be calculated of this figures in detail are given in appendices 1 to 5 summarizing the result from appendices 1 to 5, we have.

Table No. 4.6

Statistic by Enterprises

Enterprises / Particulars	NOC (KL)
Budgeted Sales	
Mean (x)	595528
SD (σx)	108413.3
CVx	18.20
Actual Sales	
Mean (y)	587803
SD (σy)	92928
CVy	15.81

Source: Appendix 1-5

From the above analysis it is evident that the budgeted sales of NOC is less stable than actual sales. It is because the coefficient of variation of budgeted sales is greater than that of its actual sales. In other words, the actual sales of NOC is more homogeneous than that of its planned one. DDC gives the actual sales figure S.D and CV more than that of its planned ones. Hence, the actual

figures are less consistent. The actual sales of RDL also has more SD and more CV so it is more homogeneous. The SD of actual sales of AIC is less so it seems mores so it is less consistent. The actual sales of NTL has less SD and less CV than that of planned one which indicated that the actual figures are DDC too where planned sales are quite variable. In case of RDL, AIC and NTL, though the SD and CV give different result, CV is a good indicator of variability, actual sales are less homogeneous than planned sales. So the weakness here is an achievement.

Another statistical tool correlation coefficient can be applied to analyze the relationship between budget sales and actual sales. By using Karl Pearson's coefficient of correlation (r) we can examine whether there is positive relation between budgeted sales and actual sales. For this purpose, budgeted figures are assumed to be independent variable and are denoted by X and actual figures are assumed to be dependent variable and are denoted by Y. then the significance of r is tested with probable of error of r.

Table No. 4.7

Correlation of Budgeted and Actual Sales by Enterprises

Name of Corporation	Correlation Co-efficient (r)	PE (r)
NOC	0.99	0.006
DDC	0.85	0.084
RDL	0.97	0.019
AIC	0.8	0.062
NTL	0.446	0.242

Source: Appendix 1-5

From the above table, it is clear that the value of Y of NOC is definitely significant since it is greater than probable error of r (0.99>0.006). Hence, the actual sales will go on with budgeted sales positively. The value of r of DDC is also significant because it is greater than the probable error of r (0.85>0.084). Hence, the actual sales of DDC will go on positively with budgeted sales. The

value of r of RDL is highly significant and positive which is explained by less PE (r) (0.97>0.019). The correlation coefficient of AIC is also highly significant and positive which is explained by less PE~ (r) (0.89>0.062). And the value of r of NTL is significant because it is greater than the probable error of r (0.446> 0.242). Hence, the actual sales of NTL will go on positively with budgeted sales.

A regression line can also be fitted to show the degree of relationship between budgeted sales and actual sales. For this purpose actual sales have been assumed to be dependent upon budgets. So, the regression line of Y on X will be as follows:

$$Y - \overline{Y} = r\frac{\sigma Y}{\sigma X}X - \overline{X}$$

The regression lines of actual sales of different companies on their budgeted sales can be presented in the following table as given by appendices 1 to 5.

Table No. 4.8

Regression Lines of Sales by Enterprises

Enterprise	Regression Line Y on X	Relationship	Activity base
NOC	0.8486X + 82442.40	Positive	KL
DDC	0.9049X + 2610235.20	Positive	Ltrs
RDL	3.9180X - 543244590.00	Negative	Rs.
AIC	0.6587X - 3898.10	Negative	MT
NTL	0.1640X + 656938362	Positive	Rs.

Source: Appendix 1-5

The above table shows that some company have positive and some company have negative relationship of planned sales towards its actual sales. The regression line of NOC explains after a certain quantity i.e. 82442.40 K.l of oil the actual sales will be increased by 0.8486 KL with per KL increase in budgeted sales. The regression line of DDC indicated beyond 2610235.20 litres

of milk the actual sales will be increased by 0.9049 litre with per litre increase in budgeted sales. The actual sales of RDL will also increase by 3.9180 Rs. With per rupee increase in budgeted sales after the point of (Rs. 543244590) as explained by its regression line. The actual sales of AIC will also increase by 0.6587 MT of its product. The regression line of NTL shows after Rs. 656938362 the actual sales will increase by Rs. 0.1640 with per rupee increase in budgeted sales.

To conclude the characteristic of sales figures (target and achievement) following points can be drawn.

a) Sales achievements are more consistent than budgeted sales.

b) Positive correlation exists between budgeted and actual sales.

c) The correlation coefficients are significant in all PEs.

d) The relationship is positive between budgeted and actual sales as show by regression lines except RDL and AIC.

4.2 Comparative Study of Planed Sales and Achievement:

Under this subsection, how well the plans set by the corporations are achieved is studied. Due to the limitation of data available so far, the study focuses only on the achievement of sales plan and production/purchase plan of different enterprises. Thus, for the purpose of this study the following ratios are calculated and used: ratio of actual sales to planned sales and the ratio of actual production/purchase to planned one.

Ratio of Actual to Planned (RAS)

The ratio of planned sales and actual sales of the corporation under study with their respective years are shown in the following table. They are also called ratios of actual sales to plan. They indicate that to how much extent the actual sales are adhered to the planned ones.

Table No. 4.9

Ratios of Actual Sales to Plan

(in Percentage)

FY / Particular	2059/060	2060/061	2061/062	2062/063	2063/064	Mean
Manufacturing						
DDC	88.97	97.16	101.30	97.78	91.40	95.32
RDL	54.17	58.87	73.45	70.13	74.93	66.13
Mean	71.57	78.02	87.38	83.95	83.17	80.82
Non manufacturing						
NOC	100.43	103.47	100.01	95.50	96.20	99.14
AIC	60.18	70.21	56.00	67.10	58.35	62.37
NTL	83.55	60.04	62.90	51.60	77.84	67.19
Mean	81.39	77.91	73.00	71.40	77.46	76.23

Source: Appendix 1-5

The RAS of selected manufacturing and non manufacturing corporations of Nepal are presented in the above table. The table shows that the average RAS of manufacturing corporation (80.82%) is higher than that of non-manufacturing corporation (76.23%). From FY 2059/060 to 02063/064 the manufacturing corporations have, on an average, maintained larger RAS compared to the non-manufacturing corporations. The average RAS of manufacturing corporations has declined from 87.38 percent in FY 2061/062 to 71.57 percent in FY 2059/060. The average RAS of the non-manufacturing corporations however has remained constant to some extent. It is 81.39 percent in the FY 2059/060 and declined to 71.40 percent in FY 2062/063.

Among the manufacturing corporations the average RAS is the highest for DDC (95.32%) and the lowest for RDL (66.31%). Similarly, it is highest for NOC (99.14%) and lowest for AIC (62.37%) among the non-manufacturing corporations. Thus, the average RAS of corporations ranges from 66.31 percent to 95.32 percent in the manufacturing sector and from 62.37 percent to 99.14 percent in the non-manufacturing sector.

4.3 Analysis of Planned Production/ Purchase and Achievement

After the preparation of sales plan, the next step is to prepare purchase budget in non-manufacturing enterprises and that of production budget in manufacturing enterprises. We present herewith the previous trend of the production/purchase activities and their budgets for the purpose of our analysis.

Table No. 4.10

Purchase Plan and Achievement of Nepal Oil Corporation

(In Kl)

Fiscal Year	Plan	Actual	Achieved	Change
2059/060	471506	459791	97.5	-
2060/061	520460	526293	101.12	3.69
2061/062	593445	594771	100.22	-0.89
2062/063	671400	637381	94.93	-5.28
2063/064	768353	742017	96.57	1.73

Source: NOC, Babarmahal

Table No. 4.11

Production Plan and Achievement of Dairy Development Corporation

(In 000 Ltrs)

Fiscal Year	Plan	Actual	Achieved	Change
2059/060	51364	56973	111.00	-
2060/061	55294	62060	112.24	1.12
2061/062	72523	68851	95.00	-15.36
2062/063	80118	72433	90.41	-4.83
2063/064	82774	71536	86.42	-4.41

Source: DDC, Lainchaur

Table No. 4.12

Production Plan and Achievement of Royal Drugs Limited

(In 000 Rs.)

Fiscal Year	Plan	Actual	Achieved	Change
2059/060	256220	190744	74.45	-
2060/061	180000	168101	93.39	25.44
2061/062	162500	224782	138.33	48.12
2062/063	211309	205856	97.42	-29.60
2063/064	202357	203877	100.75	3.42

Source: RDL, Babarmahal

Table No. 4.13

Purchase Plan and Achievement of Agriculture Inputs Corporation

(In MT)

Fiscal Year	Plan	Actual	Achieved	Change
2059/060	65578	104839	159.87	-
2060/061	77843	83041	106.68	-33.28
2061/062	94214	92651	98.34	-7.82
2062/063	73701	70701	95.93	-2.45
2063/064	68258	64758	94.87	-1.10

Source: AIC, Kuleswor.

Table No. 4.14

Purchase Plan and Achievement of National Trading Limited

(In 00.000 Rs.)

Fiscal Year	Plan	Actual	Achieved	Change
2059/060	9476	6806.90	71.83	-
2060/061	13677	8446.40	61.76	-14.02
2061/062	9838	6106.50	62.07	0.50
2062/063	9100	6005.91	66.00	6.33
2063/064	12800	4774.84	37.30	-43.48

Source: NTL, Teku

The above tables show the budgeted and actual production/purchases. Table 4.10 shows both the budgeted and actual purchase of NOC have been increased and decreased year to year. On an overage the actual purchase is only 98.10% of the overage target figure. The actual purchase increased by 3.69% and 1.73% in the F.Y. 2060/61 and 2063/64 respectively. But it has decreased by 0.89% and 5.28% in the FY 2061/62 and 2062/63 respectively.

Table 4.11 shows both the planned production and actual production of DDC have been increased and decreased year to year. On an overage the actual production is only 99.00% of the average target figure. The actual production increased by 1.12% in the F.Y. 2060/061. But it decreased by 15.36%, 4.83% and 4.41% in the FY 2061/062, 2062/063 and 2063/064 respectively.

Table 4.12 shows the actual production of RDL has increased and decreased in year to year than that of planned one. It ranges from minimum 74.45% in FY 2059/060 to maximum 138.33% in FY 2061/62. The actual production is 100.87% of the average target figure which clarifies that targets are fixed on pessimistic ground. The actual production has increased by 25.44%, 48.12% and 3.42% in FY 2060/061, 2061/62 and 2063/64 respectively. But it has declined by 29.60% in the FY 2062/63.

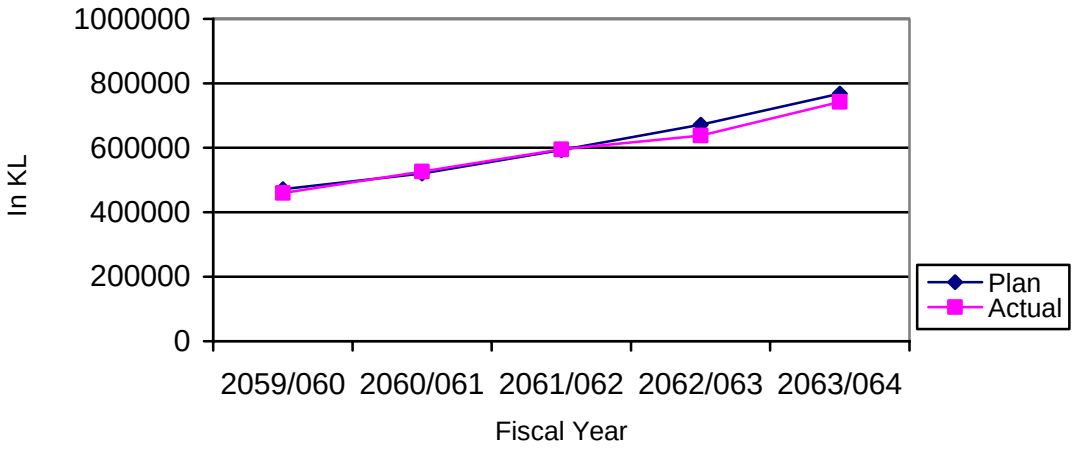
Table 4.13 shows the actual purchase of AIC has been increased and decreased in year to year. In FY 2059/060 and 2060/061, actual purchase was more than the budgeted purchase. But in FY 2061/062 to 2063/64 budget was fixed on high expectation. The achievement seems quite satisfactory in the latter years. On an average the actual purchase is 111.14% of average target figure.

Table 4.14 indicates the purchase achievement of NTL is always below the target. On an overage the actual purchase is only 59.80% of average target figure. It ranges from minimum 37.30% in FY 2063/64 to maximum 71.83% in FY 2059/060. The achievement has increased by 0.50% and 6.33% in the FY 2061/62 and 2062/63 respectively. But it has declined by 14.02% and 43.48% in the FY 2060/61 and 2063/64 respectively.

The above tables can lucidly be presented in the form of figures. The following are the figures to reveal the production/purchase plan and achievement of different enterprises in a more effective manner.

Figure No. 4.6

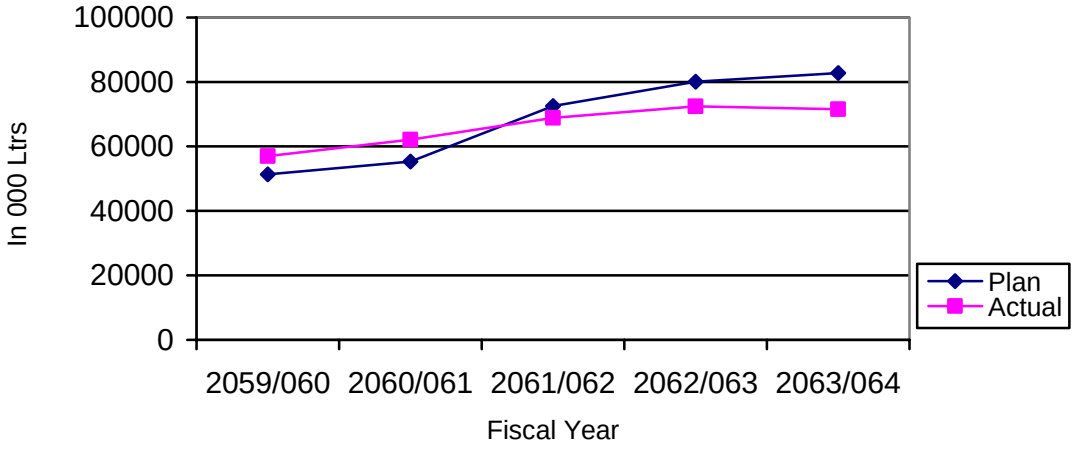
Purchase Plan and Achievement of Nepal Oil Corporation



Source: Table No. 4.10

Figure No. 4.7

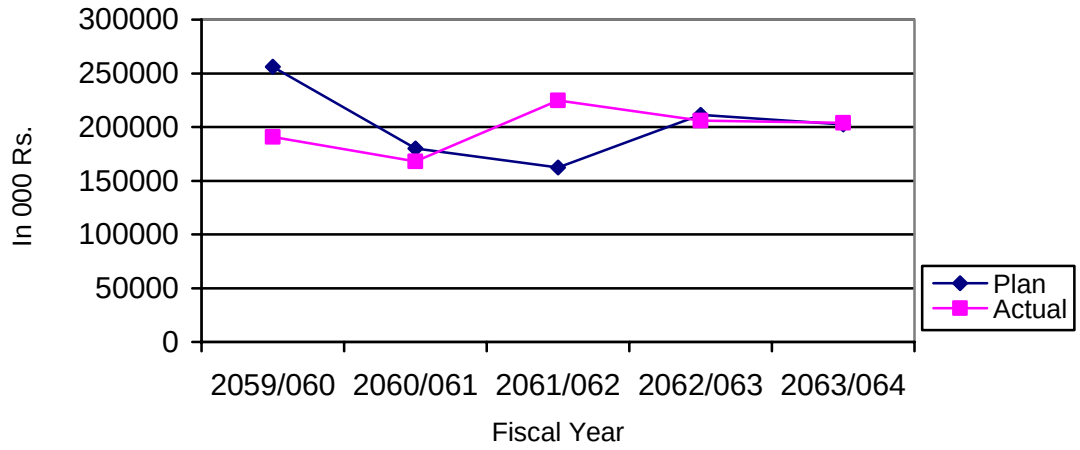
Production Plan and Achievement of Dairy Development Corporation



Source: Table No. 4.11

Figure No. 4.8

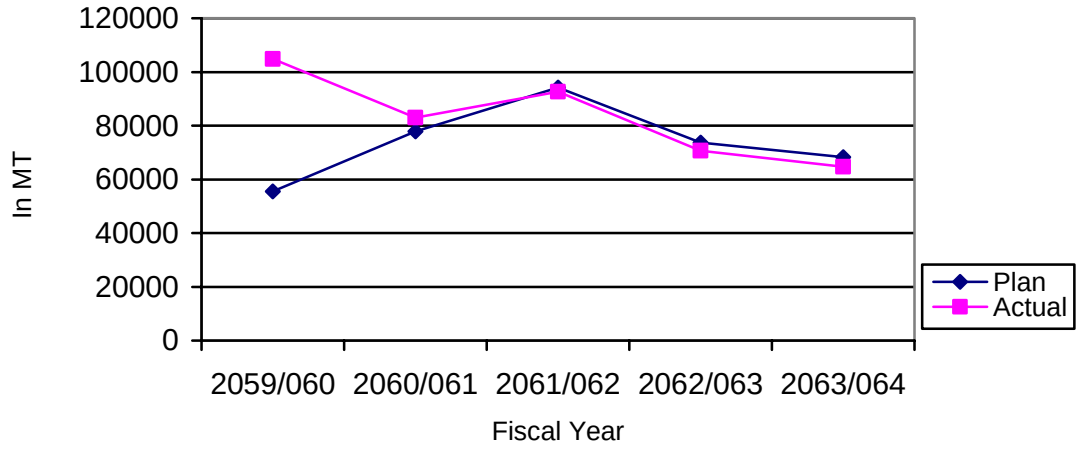
Production Plan and Achievement of Royal Drugs Limited



Source: Table No. 4.12

Figure No. 4.9

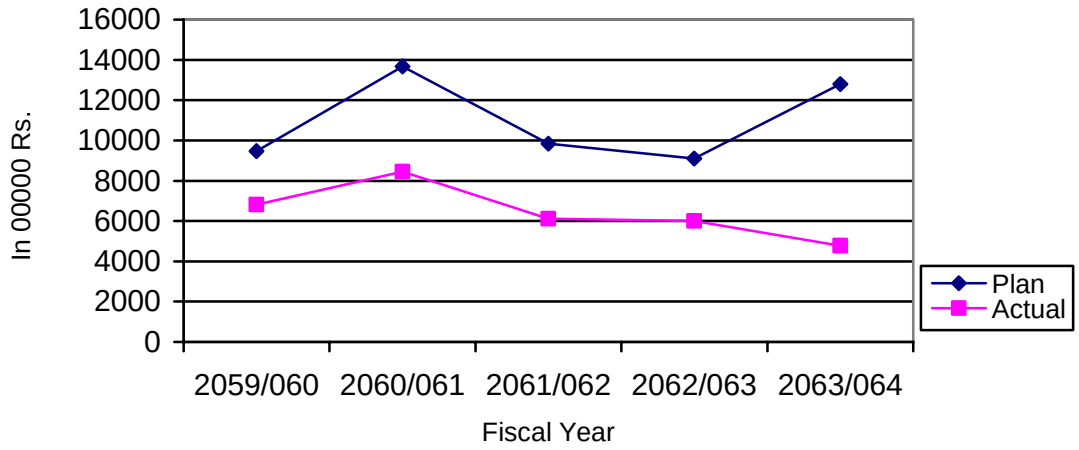
Purchase Plan and Achievement of Agriculture Inputs Corporation



Source: Table No. 4.13

Figure No. 4.10

Purchase Plan and Achievement of National Trading Limited



Source: Table No. 4.14

From above figures, it is clear that both the plan and achievement of production/purchase are in increasing trend. The achievement is greater than that of its planned figures in each year for the two enterprises-NOC and DDC. In these enterprises the gap between budgeted and actual production is very small and tolerable. But it other three enterprises the planned figures are more in all or most of the years. The distance between planned and actual trend line is being wider which clarifies the inefficiency of those people who are in planning chairs of the enterprises. It is due to the adhoc setting of plan and improper implementation resulting from absence of performance evaluation and control.

To test the variability of target and actual production/purchase of different years, arithmetic men, standard deviation and coefficient of variation can be calculated. The calculated in detail of these variables has been given in appendices 6 to 10 summary of the results has been given in the table no. 4.15 below.

Table No. 4.15

Statistics by Enterprises

Enterprises / Particulars	NOC (KL)	DDC (000 Ltrs)	RDL (000 units)	AIC (MT)	NTL (000 Rs.)
Budgeted Production					
Mean (x)	605.033	68.41	202.48	75.92	1097.82
SD (σx)	106.10	12.83	31.84	10.10	188.08
CVx	17.52	18.75	15.72	13.29	17.13
Actual Production					
Mean (Y)	592.51	66.37	198.67	83.20	642.81
SD (σy)	96.300	5.94	18.75	14.52	120.27
(CVx)	16.27	8.95	9.44	17.45	18.71

Source: Appendix 6-10

According to the above analysis budgeted purchase of NOC is more variable than actual purchase since it has coefficient of variation of budgeted purchase more. It is further proved by the coefficient of standard deviation is greater than that of actual purchase. The SD and CV of actual production of DDC are less than that of budgeted figures so actual production is more consistent. The actual production of RDL has less SD and CV so its actual production are more consistent than that of planned ones.

Both the coefficient of SD and CV of budgeted purchase of AIC are less than those of its actual ones. So the budgeted purchase are more consistent. The SD of budgeted purchase of NTL is more so its budgeted purchase figures are more variable. But the CV of budgeted purchase is less which implies that it is less variable at the same time. Since the CV is better indicator of magnitude of variation, the budgeted purchase is said to be less variable though the SD gives quite a different result. The means of actual purchase/production of NOC, DDC, RDL, AIC and NTL are less than the planned ones.

Correlation coefficient can also be calculated to analyses the relationship between budgeted purchase and actual purchase. For this purpose, the budgeted

figures are assumed to be independent and actual figures dependent variables. Significance of r then can be tested with the probable error of r.

Table No. 4.16

Correlation of Budgeted and Actual Production by Enterprises

Name of Corporation	Correlation Co-efficient (r)	PE (r)
NOC	0.993	0.004
DDC	0.976	0.014
RDL	-0.241	0.284
AIC	0.161	0.294
NTL	0.268	0.280

Source: Appendix 6-10

From the above table it is clear that the value of r of NOC is significance, since it is greater than the probable error of r (0.993>0.004). Hence, the actual purchase will go on with the budgeted purchase positively. The values of r of DDC is also significant because it is greater than the probable error or r (0.976>0.014). So the actual production of DDC will go on positively with the budgeted production. The correlation co-efficient of RDL shows that there is no positive correlation between target purchase and actual production since it has negative r. The correlation coefficient of AIC. show that there is positive correlation between target purchase and actual purchase. But, it is due to the chance as indicated by PE (r) which is greater than r(0.161<0.294). So value of r is not significant at all and it is doubtful to say whether the actual purchase will go on same direction with what of target or not. The correlation coefficient of NTL also is positive, but it is insignificant since it is less than the probable error of r (0.268<0.280).

The relationship between budgeted and actual production/purchase can also be shown by fitting the regression lines. The following table presents the regression lines regarding these variables of different corporations.

Table No. 4.17

Regression Lines of Production by Enterprises

Enterprise	Regression Line	Relationship	Activity base
NOC	46253+0.90209X	Positive	KL
NTL	458028475+0.17105X	Positive	Rs.
AIC	51111.55+0.42266X	Positive	MT
DDC	35441292.05+0.4521X	Positive	Ltrs.
RDL	227431918134-0.14204X	Negative	Units

Source: Appendix 6-10

The above table shows that NOC, NTL and DDC have positive relationship between their planned and actual production/purchase. AIC, and RDL have negative relationship between their planned and actual figures. The regression line of NOC explains after a certain quantity i.e. 46253 KL of oil the actual purchase will be increased by 0.90209 KL with per KL increase in budgeted purchase. The regression line of NTL indicates beyond Rs. 458028475 of purchase the actual purchase will be increased by Rs. 0.17105 with per rupee increase in budgeted purchase.

The regression line of DDC indicates the actual production will increases by 0.4521 ltrs. of milk with per litre increases in the budgeted production after the point of 35441929.05 litres the regression line of RDL gives negative relationship between planned and actual production. After 227431918.34 units the actual production will be reduced by 0.14204 units with per unit increase in budgeted production.

To conclude the characteristics of production purchase figures (Targets and Achievements) analyzed, following points can be drawn.

1. Production achievements are more consistent than the planned ones in NOC, DDC and RDL whereas they are more variable in AIC and NTL.
2. Positive correlation exists between actual and budgeted production/purchase leaving RDL and AIC.
3. The correlation coefficient and RDL the relationship is positive between budgeted and actual production/ purchase as shown by the regression lines.

4.4 Comparative Study of Planed and Actual Production:

The Ratio of planned production/purchase and actual production of the corporations under study with their respective years are shown in the following table. They are also termed as ratios of actual production to plan. They indicate that to how much extent the actual production/purchase are adhered to the planned ones.

Table No. 4.18

Ratios of Actual Production to Planned by Year and by Corporation

(in percentage)

Particular \ Fiscal Year	2059/060	2060/061	2061/062	2062/063	2063/064	Mean
Manufacturing						
DDC	88.97	97.16	101.30	97.78	91.40	95.32
RDL	54.17	58.87	73.45	70.13	74.93	66.13
Mean	71.57	78.02	87.38	83.95	83.17	80.82
Non manufacturing						
NOC	100.43	103.47	100.01	95.50	96.20	99.14
NTL	60.18	70.21	56.00	67.10	58.35	62.37
AIC	83.55	60.04	62.90	51.60	77.84	67.19
Mean	81.39	77.91	73.00	71.40	77.46	76.23

Source: Appendix 6-10

The above table shows that the average RAP of manufacturing corporation (95.45%) is greater than that of non-manufacturing corporation (89.65%) implying the manufacturing corporations more efficient in the production/ purchase achievement. Among the manufacturing corporations the average RAP is highest in FY 2061/062 (116.67%) and lowest in FY 2059/060 (92.73%). Similarly, it is the highest in FY 2059/060 (9109.74%) and lowest in FY 2063/64 (76.25%) in manufacturing enterprises. Thus, the average RAP of manufacturing corporations ranges from 92.73 percent to 116.67 percent during

the five years under study and that of non-manufacturing corporations ranges from 76.25 percent to 1.9.74 percent during the five years under study.

So far as corporation wise achievement is concerned, the average RAP is highest for RDL (100.90%) and lowest for DDC (90.10%) among the non-manufacturing corporations. Similarly, among the non-manufacturing corporations the average RAP is the highest for AIC (111.14%) and lowest for NTL (59.73%). The average RAP ranges from 90.01 percent to 100.90 percent leading to a grand average 95.45 percent in the manufacturing sector and that ranges from 59.73 to 111.14 percent leading to a grand average 89.65 percent in the non-manufacturing sector.

Test of Significance

Student's t-values at 5 percent level of significance computed for the mean values of the achievement of plan ratios in each of the corporations of the manufacturing and non-manufacturing groups are as follows:

Ratios	t-values	D.f.	Result
RAS	0.249	3	Not significant
RAP	0.285	3	No significant

It may be seen from the above that the difference in the mean values of both the achievement of planned ratios (RAS and RAP) computed for each of the corporations in the manufacturing and non-manufacturing groups is not statistically significant. In other words the two groups do not differ significantly in the mean values of each of the corporations. Table value (3.182 at 5% level).

Similarly, student's t-values at 5 percent level of significance computed for the mean values of RAS and RAP of the manufacturing and non-manufacturing groups in each of the years are as follows:

Ratios	t-Values	D.F.	Result
RAS	1.394	8	No significant
RAP	1.437	8	Not significant

Clearly, the manufacturing and non-manufacturing groups do not differ significantly in the mean values of RAS and RAP in each of the year. It is because the t-values calculated above are less than the tabulated value of t at 5 percent level for 8 degree of freedom (2.306)

4.5 Profit and Loss Analysis

Profit and loss experienced by different companies can be tested just by comparing net profit with their sales. The following tables present the net profit and sales of the companies by year so as to analyses their profit pattern during the period under study.

Table No. 4.19

Profit Pattern by Year of Nepal Oil Corporation

(in 0000 Rs.)

Fiscal Year	Net Profit	Sales	% N P to sales
2059/060	24537	909944	2.70
2060/061	58316	985230	5.92
2061/062	46847	1139460	4.11
2062/063	(28000)	1451890	-1.93
2063/064	(29540)	1610610	-1.83

Source: NOC, Babarmahal

Table No. 4.20

Profit Pattern by Year of Dairy Development Corporation

(in 000 Rs.)

Fiscal Year	Net Profit	Sales	% N P to sales
2059/060	38694	819152	4.72
2060/061	106602	880409	1.21
2061/062	(5914)	1053764	-0.56
2062/063	(31801)	1274108	-2.50
2063/064	(151)	1278193	-0.012

Source: DDC, Lainchaur

Table No. 4.21

Profit Pattern by Year of Royal Drugs Limited

(in 000 Rs.)

Fiscal Year	Net Profit	Sales	% N P to sales
2059/060	(1662)	79706	-2.09
2060/061	(1762)	89327	-1.97
2061/062	(1110)	116045	-0.96
2062/063	2060	111971	1.87
2063/064	2405	122401	1.96

Source: RDL, Babarmahal

Table No. 4.22

Profit Pattern by Year of Agriculture Inputs Corporation

(in 0000Rs.)

Fiscal Year	Net Profit	Sales	% N P to sales
2059/060	(31670)	1388617	-2.28
2060/061	(69181)	1905783	-3.63
2061/062	(496948)	1699897	-29.23
2062/063	75675	1266775	5.97
2063/064	114140	1022288	11.16

Source: AIC, Kuleswor

Table No. 4.23

Profit Pattern by Year of National Trading Limited

(in 000 Rs.)

Fiscal Year	Net Profit	Sales	% N P to sales
2059/060	80814	1053277	7.67
2060/061	1740379	881349	19.79
2061/062	44704	1018505	4.39
2062/063	67567	772661	8.74
2063/064	55350	784631	7.05

Source: NTL, Teku

Table No 4.19 shows NOC has earned profit in the FY 2059/060 to 2061/062. In the other years has suffered loss. The maximum profit is in the FY 2060/061 and the maximum profit on sales is 5.92% in the same year.

Table 4.20 shows DDC has suffered loss in the FY 2061/62 to 2063/64. In the other years under study it has experienced profit. The maximum profit is in the FY 2059/060 and the maximum profit margin on sales is 4.72% in the same year.

Table 4.21 indicates RDL has suffered loss in FY 2059/060 to 2063/064. In the FY 2062/63 and 2063/64 when there are profit. The profit margin on sales in 1.96% the FY in 2063/64 and the maximum profit also same year.

Table 4.22 shows AIC has suffered loss in the FY 2059/060 to 2061/062. In the FY 2062/063 and 2063/064 when there are profit. The profit margin on sales 11.16% in Fy 2063/064 and maximum profit also same year.

Table 4.23 shows NTL has earned profit in all years. The maximum profit is in the FY 2060/61 and the maximum profit margin on sales is 19.79% in the same years.

Hence, in terms of profit margin on sales, the most efficient enterprises in NTL which has average net profit margin 9.53%. The rankings of other enterprises are NOC, and DDC which have average net profit margin 1.80% and 0.60% respectively. The least efficient two are RDL and AIC which have negative average net profit margin 0.24% and 3.60% respectively.

Time element is also an important factor to affect the profit achievement. With the passage of time, the profit achievement changes which can be expressed through time series. A straight line trend through least square can thus be deducted for analyzing the characteristics of profit and loss trend of different corporation by year. Summarizing the values calculated in appendices 11 to 15; we have the following straight line equation by different corporations.

Table No. 4.24

Profit Trend by Enterprises

Enterprise	Straight line equation of Profit (y)	Result
NOC	1429220000-636130000X	Negative
DDC	22998000-12015300X	Negative
RDL	-7800+181400X	Positive
AIC	-83217050+4364943X	Positive
NTL	84562800-1577400X	Negative

Source: Appendix 11-15

The above table clarifies that RDL and AIC have positive profit trend whereas NOC, DDC and NTL have negative profit trend. The profit of RDL will increase every year by Rs. 181400. And the profit of AIC will also increase every year by Rs. 43647943. NOC will suffer Rs. 636130000 less profit it has negative profit trend. DDC will suffer Rs. 12015300 less profit since it has negative profit trend. And NTL will also suffer Rs. 1577400 less profit since it has negative profit trend.

In an overall perspective, other things remaining the same, the two corporations RDL and AIC have little bit profitability to some extent as explained by their positive regression lines. The remaining three corporations DDC, NOC and NTL seem sick for the attainment of their profitability since they have negative regression lines.

4.6 Comparative Study of Achievement of Profitability

Under this subsection, how well the profits are achieved by the corporations is studied. The study focuses only on the achievement of earning before tax. Thus for the purpose of this study the following ratios are calculated and used: profit margin on sales (PMS) and Return on total assets (ROTA).

4.6.1 Profit Margin on Sales (PMS)

The ratio of net profit before tax and sales of the corporation is called profit margin on sales. It is also called net profit margin. This ratio compares profit in relation to sales because it is important that the corporations be able to generate profit on each unit of sales. If the firm lacks a sufficient margin of profit on sales, it will not be able to cover its costs and earn a profit for its owners. The profit margin on sales on sales of the corporations under study with their respective year are shown in the following table. The data input tabulated here are taken from table 4.19 to table 4.23 of this work.

Table No. 4.25

Profit margin on Sales by Corporation and by Year

Fiscal Year / Particular	2059/060	2060/061	2061/062	2062/063	2063/064	Mean
Manufacturing						
DDC	4.72	1.21	-0.56	-2.50	-0.012	0.57
RDL	-2.09	-1.97	-0.96	1.87	1.96	0.24
Mean	1.32	-0.38	-0.76	-0.32	0.97	0.16
Non manufacturing						
NOC	2.70	5.92	4.11	-1.93	-1.83	1.80
AIC	-2.28	-3.63	-29.23	5.97	11.16	-3.60
NTL	7.67	19.79	4.39	8.74	7.05	9.53
Mean	2.70	7.36	-6.91	4.26	5.46	2.58

Source: Appendix 11-15

Above table clarifies that the average PMS of non-manufacturing corporations (2.58%) is greater than that of manufacturing corporations (0.16%). It implies that the overall performance of non-manufacturing corporations during the study period is somehow satisfactory since their grand average of PMS, though not more, is positive. And the grand average of manufacturing corporations is little bit satisfactory.

The average PMS of manufacturing corporations varies from -0.76 percent (lowest) in FY 2061/062 to 1.32 percent (highest) in FY 2059/60. While it ranges from -6.91 percent (lowest) in 2060/061 to 7.36 percent in FY 2060/61 in the non-manufacturing corporations. Similarly, looking at the corporations wise achievement the average PMS of manufacturing corporation ranges from lowest -3.60 percent for (AIC) to highest 9.53 percent (for NTL) in the non-manufacturing corporations.

4.6.2 Return on Total Assets (ROTA)

It is the ratio of profit before tax to total investment of the firm. It is arrived at to measure the profit against the amount invested by owners and creditors so as to ascertain whether the assets are being properly utilized. The following table reveals the return on total assets of different corporations by different years under study.

Table No. 4.26

Return on Total Assets by Corporation by Year

Particular \ Fiscal Year	2059/060	2060/061	2061/062	2062/063	2063/064	Mean
			Manufacturing			
DDC	5.71	1.53	-0.75	-4.21	-0.02	0.45
RDL	-1.62	-1.78	-1.13	2.10	2.38	-0.01
Mean	2.05	-0.13	-0.94	-1.05	1.18	0.22
			Non manufacturing			
NOC	15.09	27.59	15.94	-12.59	-6.36	7.93
AIC	-3.27	-4.11	-37.13	15.87	23.93	-0.94
NTL	20.12	35.45	8.87	12.98	9.24	17.33
Mean	10.65	19.64	-4.11	5.42	8.94	8.11

Source: Appendix 11-15

The above table shows the average return in the manufacturing corporation varies from -0.01 percent (for RDL) to 0.45 percent (for DDC) leading to a

grand average of 0.22 percent. Similarly, the average return in the non-manufacturing corporation varies from -0.94 percent for (AIC) to 17.33 percent (for NTL) leading to a grand average 8.11 percent. Hence, the return on total assets is higher in non-manufacturing corporations compared to the manufacturing corporations. The annual ROTA ranges in manufacturing corporations from minimum -1.05 percent in the FY 2062/063 to maximum 2.05percent in FY 2059/060 whereas in non-manufacturing corporations it ranges from minimum -4.11 percent in FY 2062/63 to maximum 19.64 percent in FY 2060/061. Looking at these figures it can be said that the overall performance of the corporations as indicated by their ROTA is not encouraging.

4.6.3 Test of Significance

Students t-values at 5 percent level of significance computed for the mean values of the profitability ratios in each of the corporations of the manufacturing and non-manufacturing groups are as follows:

Ratios	t-values	D.F.	Result
PMS	0.489	3	Not significant
ROTA	1.158	3	Not significant

The difference in the mean values of both the profitability ratios computed for each of the corporations in the manufacturing and non-manufacturing groups is not statistically significant since the computed t-values are less than the tabulated value 0.05 at 3 D.f. 3.182. In other words, the two groups do not differ significantly for the achievement of profit.

Similarly, students t-values at 5 percent level of significance computed for the mean values of PMS and ROTA of the manufacturing and non-manufacturing groups in each of the years are as follows:

Ratios	t-values	D.F.	Result
PMS	0.489	8	Not significant
ROTA	1.158	8	Not significant

Clearly, the manufacturing and non-manufacturing groups do not differ significantly in the mean values of PMS and ROTA in each of the year. In other words the two groups of corporations are same for the profitability achievement in each of the years under study.

4.7 Analysis of Cost Behaviour

Nepalese public enterprises do not have their clear cut boundaries their cost behaviour. However, they have a rough practice of regregating casts into fixed and variable components being based upon their nature of incurrence. Here, thus for the purposes of this study the costs have been advised and opined by the top level official in the responsibility of accounting of the concerned enterprises through direct interview conducted with them. Following tables present the cost and their behaviour in different corporation by separating them into fixed variable parts.

Table No 4.27

Cost Behaviour of Nepal Oil Corporation

(in '000000 Rs.)

Cost item & Behaviou	FY	2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Cost of POL	V	79126	83141	97839	123240	155271	107723.40
Cost of POL	F	8792	9238	10871	13692	17252	11969
Adm. Expense	F	699	831	1039	870	1367	961.20
TFC		9491	10069	11910	14,562	18619	12930.20
Total costs		88617	93210	109749	137802	173890	120653.60

Source: Appendix 6-10

Table No 4.28

Cost Behaviour of Agriculture Inputs Corporation

(in '000000 Rs.)

Cost item & Behaviour	FY	2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Direct expense	V	146	27	29	37	24	52.60
Cost of sales	F	1142	1321	1578	1103	1209	1270.60
TVC		1288	1348	1607	1140	1233	1323.20
Transport subsidy	F	44	-	-	42	45	26.20
Adm. Expenses	F	74	82	103	113	123	99.00
TFC		118	82	103	155	168	125.20
Total costs		1406	1430	1710	1295	1401	1448.40

Source: Appendix 6-10

Table No 4.29

Cost Behaviour of Dairy Development Corporation

(in '000000 Rs.)

Cost item & behaviour	FY	2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Collection expenses	V	561	612	801	904	987	773
Processing expenses	V	154	163	144	146	106	142.60
Selling expenses	V	35	39	42	41	40	39.40
TVC		750	814	987	1091	1133	955
Processing expenses	F	31	34	42	98	98	60.60
Administrative expenses	F	23	24	37	41	44	33.80
Depreciation	F	26	25	34	38	36	31.80
Gratuity	F	3	15	10	6	20	10.80
Interest on loan	F	4	5	16	10	12	9.40
TFC		87	103	139	193	210	146.40
Total costs		837	917	1126	1284	1343	1101.4

Source: Appendix 6-10

Table No 4.30

Cost Behaviour of Royal Drugs Limited

(in '000 Rs.)

Cost item & Behaviou / FY		2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Raw material	V	57468	56361	80553	73267	65458	66621.40
Subsidy material	V	20	-	-	1865	4074	1191.80
Production year	V	11125	12911	18254	1712	910	8982.40
TFC		68613	69272	98807	76844	70442	76795.60
Administrative expenses	F	13525	12520	17654	17062	22189	16590
Depreciation	F	3492	4940	5251	2055	1844	3516.40
Production expenses	F	1877	914	1752	20104	23490	9627.40
TFC		18894	18374	24657	39221	47523	29733.80
Total costs		87507	87646	123464	116065	117965	106529.4

Source: Appendix 6-10

Table No 4.31

Cost Behaviour of National Trading Limited

(in '00000 Rs.)

Cost item & Behaviou / FY		2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Purchase and direct expenses	V	9520	8431	9972	6846	7301	8414
Adm. expenses	F	481	487	795	806	898	693.40
Exchange loss	F	2	-	-	-	1	0.60
Depreciation	F	15	18	26	26	27	22.40
Interest on loan	F	12	-	34	18	8	14.40
TFC		510	505	855	850	934	730.80
Total costs		10030	8936	10827	7696	8235	9144.80

Source: Appendix 6-10

Above table shows the cost composition of different enterprises. The total cost of NOC contains 89% variable costs and 11% the fixed cost. AIC has 91 variable costs and only 9% fixed portion on cost. DDC is experiencing 87% of variable costs in its total cost structure RDL's cost patterns shows 72% of variable costs and 28% the fixed cost NTL's cost structure depicts 92% of variable cost.

Those enterprises which have less fixed cost portion will obtain more profit other things remaining the same i.e. sales units and sales price. Here, the enterprise with the least fixed cost portion is NTL which has only 8% fixed cost. So it seems to have been more profit potential. The rankings of other enterprises based on it are AIC, NOC, DDC and RDL which have average fixed cost 9%, 11%, 13% and 28% respectively. Here, the enterprise with the least profit potential is RDL since it has greater portion of fixed cost as compared to other enterprises.

4.8 Cost Volume Profit Analysis

Public enterprises always wish to produce and sell a product till sales revenue at least equals to marginal cost plus fixed cost. So cost volume profit analysis helps to determine and evaluate the implications of its short run decision about sales volume to avoid losses and to attain the sales volume at which the profit goal of the enterprise will be achieved. The cost volume profit analysis here is based on the following assumptions.

a) Activity base is sales revenue
b) Opening and closing stock remain same.
c) Calculations are based on total figures.
d) Non-operating incomes are ignored.

The following tables present the cost volume profit figures of different enterprises.

Table No 4.32

Cost Volume Profit Analysis of Nepal Oil Corporation

(in '000000 Rs.)

Particular / FY	2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Sales	90944	98524	113851	145189	161061	121913.80
Less: VC	79126	83141	97839	123240	155271	107723.40
CM	11868	15383	16012	21949	5790	14190.40
Less: FC	9491	10069	11910	14562	18619	12930.20
NP	2377	5314	4102	7387	(12829)	1260.20
CMR	0.13	0.16	0.14	0.1512	0.036	0.1164
BEP	73008	62931	85017	96310	517194	111084
BE Ratio	0.803	0.639	0.747	0.663	3.21	0.9112

Table No 4.33

Cost Volume Profit Analysis of Dairy Development Corporation

(in '000000 Rs.)

Particular / FY	2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Sales	819	880	1054	1274	1278	1061
Less: VC	750	814	987	1091	1133	955
CM	69	66	67	183	145	106
Less: FC	87	103	139	193	210	147
NP	(18)	(37)	(72)	(10)	(65)	(41)
CMR	0.084	0.075	0.064	0.144	0.113	0.0999
BEP	1033	1373	2187	1344	1851	1471
BE Ratio	1.261	1.560	2.075	1.055	1.448	1.386

Table No 4.34

Cost Volume Profit Analysis of Royal Drugs Limited

(in '000 Rs.)

Particular / FY	2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Sales	79706	89327	116045	111971	122401	103890
Less: VC	68613	69272	98807	76844	70442	76796
CM	11093	20055	17238	35124	51959	27094
Less: FC	18894	18377	24657	39221	47523	29724
NP	(7801)	1681	(7419)	(4094)	4436	(2640)
CMR	0.139	0.225	0.149	0.314	0.424	0.260
BEP	135758	81840	165989	125021	111951	114013
BE Ratio	1.703	0.916	1.43	1.116	0.915	1.097

Table No 4.35

Cost Volume Profit Analysis of National Trading Ltd.

(in '00000 Rs.)

Particular / FY	2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Sales	10533	8813	10185	7727	7846	9020.80
Less: VC	9520	8431	9972	6846	7301	8414.00
CM	1013	382	213	881	545	606.80
Less: FC	510	505	855	850	934	730.80
NP	530	(123)	(642)	31	(389)	(124)
CMR	0.096	0.043	0.021	0.114	0.070	0.067
BEP	5303	11651	40883	7455	13446	10864
BE Ratio	0.5035	1.322	4.014	0.9648	1.7137	1.2043

Table No 4.36

Cost Volume Profit Analysis of Agriculture Inputs Corporation

(in '000000 Rs.)

Particular \ FY	2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Sales	1388	1906	1699	1267	1022	1456.40
Less: VC	1288	1348	1607	1140	1233	1323.20
CM	100	558	92	127	211	133.20
Less: FC	118	82	103	155	168	125.20
NP	(18)	476	(11)	(28)	43	8
CMR	0.072	0.2936	0.054	0.10024	0.2065	0.0915
BEP	1638	279	1902	1546	814	1368
BE Ratio	1.18	0.146	1.12	1.22	0.796	0.9393

Table 4.32 shows that NOC has positive contribution margin every year. But the contribution margin in FY 2059/060 couldn't cover the fined cost so it has suffered loss in that year. The average break even point is always below the sales except the FY 2059/060.

Table 4.33 shows DDC, though has positive contribution margin every year neither of them is enough to cover the fixed cost. So it has been suffering loss every year. Annual sale is always below the average break even point. Table 4.34 exhibits the contribution margins of RDL couldn't cover the fixed costs except the FY 2060/061 and 2063/64. So it has suffered loss in those years. The sales of FY 2061/62 is more than the average break even point. However, it has the maximum fired costs. So there is loss. The least breakeven point is in FY 2060/61 where there is profit even thought it is below the average BEP.

Table 4.35 depicts there is positive contribution margin of NTL every year, however, it has experienced profit in FY 2059/60 and 2062/63 only because there are higher, contribution margin ratios than there are other years. But average sales is below than average BEP.

Table 4.36 shows there are always positives contribution margin. However it has experience profit in FY 2060/061 and 2063/064 only because there are higher, contribution margin ratios than there are other years.

On an overall, among the five enterprises under study RDL is the most profitable from CMR point of view. Because it has the greatest average contribution margin ratio 0.26. The preference ranking of other enterprises is NOC, DDC, AIC and NTL which have average CMR 0.12, 0.10, 0.092 and 0.07 respectively. From break even sales ratio (BER) basis, NOC is the best enterprise since it has the least breakeven ratio 0.9112. The next preference ranking of other enterprises are AIC, RDL, NTL and DDC which have BER 0.94, 1.10 and 1.40 respectively.

4.9 Comparative Study through Contribution Margin Analysis

Under this subsection, contribution margin ratios and breakeven ratios of different corporations in different years are computed together so that their management health can be checked.

4.9.1 Contribution Margin Ratios (CMR)

It is the ratio of contribution margin to sales. It is also called profit volume ratio. The greater the ratio, the better it is. The CMR of the corporations under study with their respective years are shown in the following table. The data input tabulated here are taken from table 29 to table 33 of this work.

Table No. 4.37

Contribution Margin Ratio by Corporation by Year

Particular / FY	2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Manufacturing						
DDC	8.42	7.5	6.36	14.36	11.34	9.60
RDL	13.92	22.45	14.85	31.37	42.45	25.00
Mean	11.17	14.98	10.61	22.86	26.90	17.30
Non manufacturing						
NOC	13.05	15.61	14.06	15.12	3.60	12.29
AIC	7.20	29.28	5.41	10.02	20.65	14.51
NTL	9.62	4.33	2.09	11.42	6.95	6.88
Mean	9.96	16.41	7.19	12.19	10.40	11.23

The above table shows that the average CMR in the manufacturing corporation varies from 9.60 percent (for DDC) to 25 percent (for RDL) leading to a grand average 17.30 percent. Similarly, the average CMR in the non-manufacturing corporation varies from 6.88 percent (for NTL) to 14.51 percent (for AIC) leading to a grand average 11.23 percent. Hence, the CMR is higher in manufacturing corporations compared to the non-manufacturing corporations. The annual CMR ranges in manufacturing corporations from minimum 10.61 percent in the FY 2061/62 to maximum 26.90 percent in FY 2063/64 whereas in non-manufacturing corporation it ranges from minimum 7.19 percent in FY 2061/62 to maximum 16.41 percent in FY 2060/61. Looking at these figures, it can be said that the CMR of manufacturing and non-manufacturing corporations are little bit satisfactory.

4.9.2 Break Even Ratio (BER)

It is the ratio of breakeven sales to sales of the year. It measures what portion of sales is in necessary to cover its fixed cost for the year. The less the BER the better it is. The BER of the corporations under study with their respective years are given in the following table. The data input tabulated here are taken from table 4.32 to table 4.36 of this work.

Table No. 4.38

Break Even Ratio by Corporations by Year

Particular / FY	2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Manufacturing						
DDC	126.10	156	207.50	105.50	144.80	147.98
RDL	170.30	91.60	143.00	111.60	91.50	121.60
Mean	148.20	123.80	175.25	108.55	118.15	134.79
Non manufacturing						
NOC	80.30	63.90	74.70	66.30	321	121.24
AIC	118.00	14.6	112.00	122	79.60	89.24
NTL	50.35	132.20	401.40	96.48	171.37	170.36
Mean	82.88	70.23	196.03	94.93	190.65	126.95

The above table shows that the average BER in the manufacturing corporation varies from 121.60 percent (for RDL) to 147.98percent (for DDC) leading to a grand average 134.79 percent. Similarly, the average BER in the non-manufacturing corporation varies from 89.24 percent (for AIC) to 170.36 percent (for NTL) leading to a grand average 126.95 percent. The annual BER ranges in manufacturing corporations from minimum 108.55 percent in FY 2062/63 to maximum 175.25 percent in FY 2061/62 whereas in non-manufacturing corporation it ranges from minimum 70.23 in FY 2060/61 to maximum 196.03 percent in FY 2061/62. Looking at these figures it can be said that both the types of corporations are quite inefficient regarding their performance. It is because the average break even ratios are more than 100 percent in both of them.

4.9.3 Test of Significance

Students t-values at 5 percent level of significance computed for the mean values of CMR and BER in each of the corporations of the manufacturing and non-manufacturing groups are as follows:

Ratios	t-values	D.F.	Result
CMR	0.943	3	Not significant
BER	0.245	3	Not significant

The difference in the mean values of both the ratios computed for each of the corporations in the manufacturing and non-manufacturing groups are not statistically significant. In other words, the two groups do not differ significantly for their achievement i.e. both the groups are inefficient.

Similarly, student's t-values at 5 percent level of significance computed for the mean values of CMR and BER of the manufacturing and non-manufacturing groups in each of the year's area as follows:

Ratios	t-values	D.F.	Result
CMR	1.694	8	Not significant
BER	0.262	8	Not significant

The manufacturing and non-manufacturing groups do not differ significantly in the mean values of BER and CMR in each of the year. It is because the t-values calculated above are less than the tabulated value of t at 5 percent level for 8 degree of freedom (2.306).

4.10 Flexible Budget Analysis

It is the budget which estimates costs and profit at several levels of activity. It depends upon the cost behavior as analyzed in the above analysis for the purpose of our analysis the maximum sales during the past five year and under study is assumed to be 100% level of activity. The following tables present the flexible budget structure of different enterprises.

Table No. 4.39

Flexible Budget of Nepal Oil Corporation

(in '000.000 Rs.)

Activity Level / Particular	40%	60%	80%	100%	120%
Sales	64424	96637	128849	161061	193273
Less: VC(88.36% of sales)	56925	85388	113851	142313	170776
CM	7499	11249	14998	18748	22497
Less: FC	12930	12930	12930	12930	12930
Net Profit	(5431)	(1681)	2068	5818	9567

Table No. 4.40

Flexible Budget of Dairy Development Corporation

(in '000.000 Rs.)

Activity Level / Particular	40%	60%	80%	100%	120%
Sales	511	767	1022	1278	1534
Less: VC(90% of sales)	460	690	920	1150	1380
CM	51	77	102	128	153
Less: FC	147	147	147	147	147
Net Profit	(96)	(70)	(45)	(19)	6

Table No. 4.41

Flexible Budget of Royal Drugs Limited

(in '000 Rs.)

Activity Level / Particular	40%	60%	80%	100%	120%
Sales	48960	73441	97921	122401	146881
Less: VC(73.92% of sales)	36191	54288	72373	90479	108574
CM	12769	19153	25538	31922	38307
Less: FC	29734	29734	29734	29734	29734
Net Profit	(16965)	(10581)	(4196)	2188	8573

Table No. 4.42

Flexible Budget of National Trading Ltd.

(in '000.000 Rs.)

Activity Level / Particular	40%	60%	80%	100%	120%
Sales	4213	6320	8426	105333	12640
Less: VC(93.26% of sales)	3929	5894	7858	9823	11788
CM	283	426	568	710	851
Less: FC	731	731	731	731	731
Net Profit	(448)	(305)	(163)	(21)	120

Table No. 4.43

Flexible Budget of Agricultural Inputs Corporation

(in '000.000 Rs.)

Activity Level / Particular	40%	60%	80%	100%	120%
Sale	409	613	818	1022	1226
Less: VC(91% of sales)	372	558	744	930	1116
CM	37	55	74	92	110
Less: FC	125	125	125	125	125
Net Profit	(88)	(70)	(51)	(33)	(15)

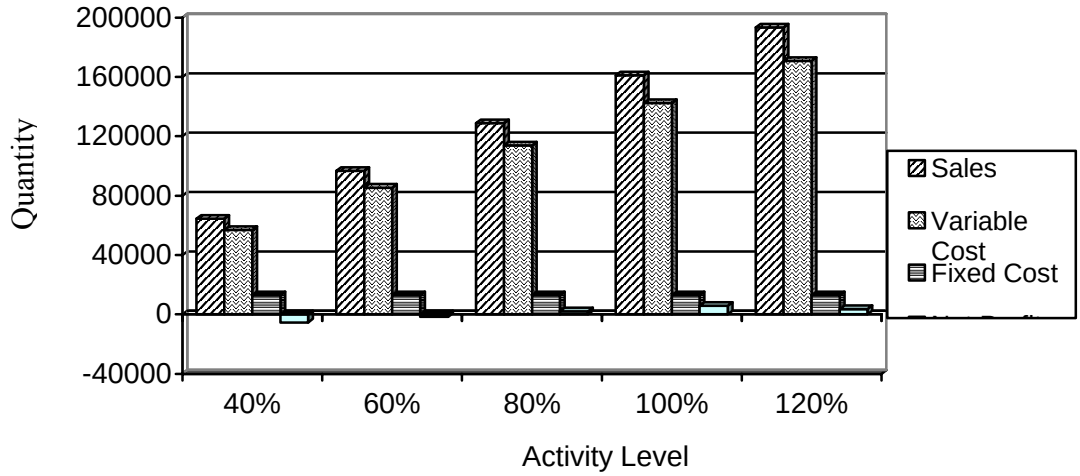
Clearly the above tables shows the revenues, expenditures and operating profit in different levels of activities. Table 4.39 indicates the profit of NOC starts from around 80 percent level of activity. It seems profitable if the greater capacity is attained. Table 4.40 exhibits DDC. cannot obtained operating profit even at 100 percent level of sales. If 120 percent sales shows the profit, so it is also a sick industry form its flexible budget structure up to 100 percent sales and over it will make profit. table 4.41 shows that the profit of RDL commences from near about 90 percent of sales. Hence, the company seems little bit satisfactory if the maximum capacity can be attained. According to table 4.42, exhibits NTL cannot obtain operating profit even at 100 percent level of sales. So it is little bit sick industry. But it will be 120 percent sales make profit. Table 4.43 shows that AIC never experiences operating profit. It

suffers more amount of loss even though the greater sales level is obtained. It is because the variable portion of cost is more than 100 percent of sales.

The above tables can be presented in a clearer from through figures. The flexible budgeted performance of different enterprises under study has been given diagrammatically as under:

Figure No. 4.11

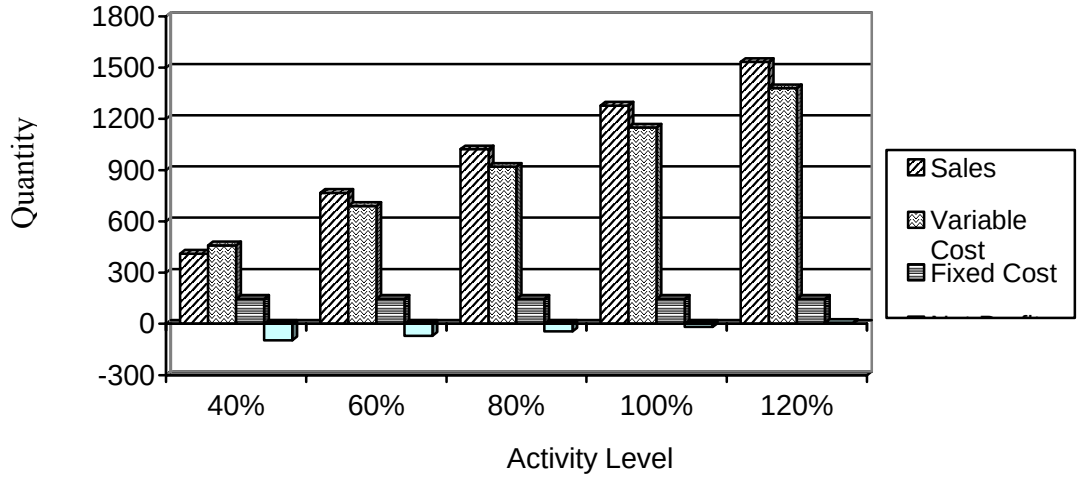
Flexible Budget of Nepal Oil Corporation



Source: Table No.4. 39

Figure No. 4. 12

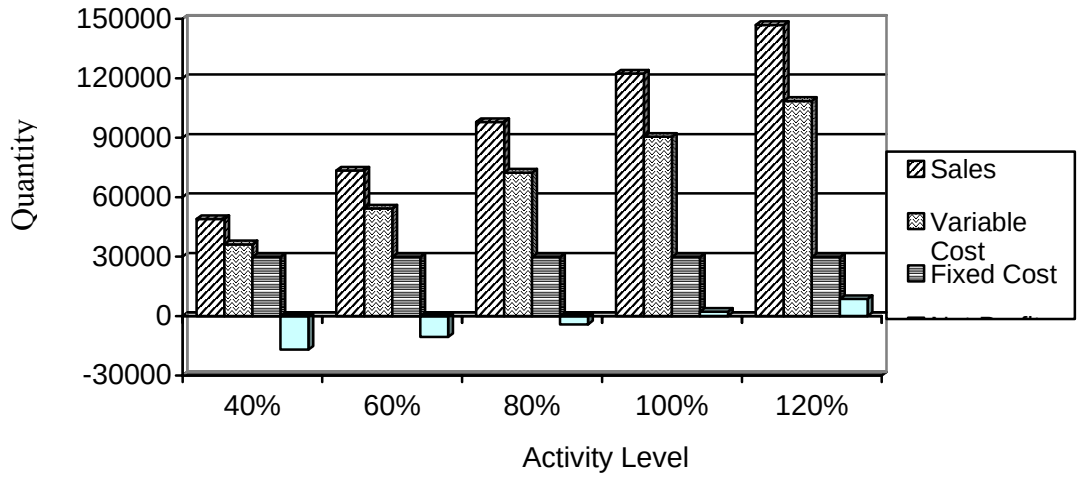
Flexible Budget of Dairy Development Corporation



Source: Table No. 4.40

Figure No. 4.13

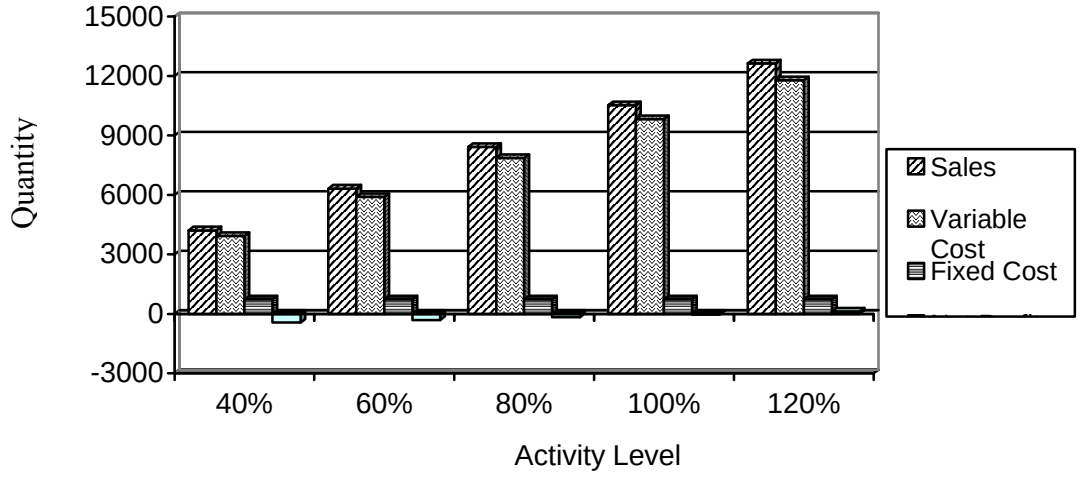
Flexible Budget of Royal Drugs Ltd.



Source: Table No. 4.41

Figure No. 4.14

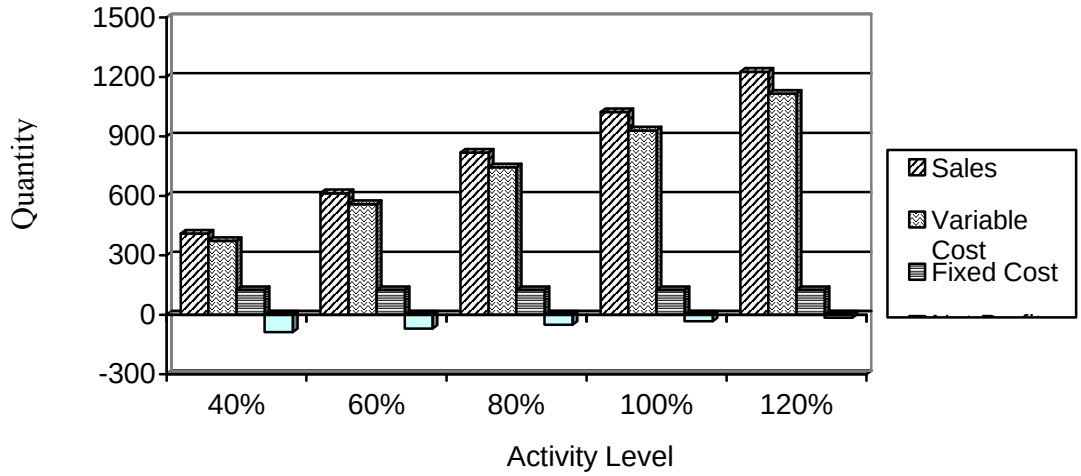
Flexible Budget of National Trading Ltd.



Source: Table No. 4.42

Figure No. 4.15

Flexible Budget of Agriculture Inputs Corporation



Source: Table No. 4.43

From the above figures, it is clear that the public enterprises under study have not been experiencing satisfactory profit. The profit of NOC starts from 80 percent actively level. DDC is unable to earn profit even at 100 percent level. RDL earns negligible profit even in 100 percent level. NTL also earns negligible profit even in 120 percent level. AIC can never experience profit. Hence, from flexible budget structure NOC and RDL seem satisfactory. DDC and NTL look inefficient to manage the cost pattern and AIC seem sick enterprise. In an overall perspective, all the enterprises are weak in their achievement of profitability.

4.11 Comparative study Through Miscellaneous Mgmt Ratios

4.11.1 Administrative Cost Ratio (ACR)

It is the ratio of administrative cost to sales. It is often said that the public enterprises are incurring losses due to heavy administrative costs. So this study examines whether their administrative costs are uniform in each group of enterprises or not. Following table presents the administrative cost ratios of different enterprises.

Table No. 4.44

Administrative Cost Ratio by Corporations by Year

Particular / FY	2059/60	2060/61	2061/62	2062/63	2063/64	Mean
Manufacturing						
DDC	2.81	2.73	3.51	3.21	3.48	3.15
RDL	16.97	14.01	15.21	15.24	18.13	15.91
Mean	9.89	8.37	9.36	9.23	10.81	9.53
Non Manufacturing						
NOC	0.77	0.84	0.91	0.65	0.80	0.79
AIC	6.51	5.99	8.74	9.85	12.00	8.62
NTL	4.57	5.52	7.80	10.43	11.45	7.95
Mean	3.95	4.12	5.58	6.98	8.08	5.78

The above table clarifies that administrative costs are high in both type of corporations as compared to their PMS. The average ACR of manufacturing corporation varies from 3.15 percent (for DDC) to 15.61) percent (for RDL) leading to a grand average 9.53 percent. Similarly, the average ACR in the non-manufacturing corporation varies from 0.79 percent (for NOC) to 8.62 percent (for AIC) leading to a grand average 5.78 percent. Hence, the AR is higher in manufacturing corporations than in non-manufacturing corporations. The annual ACR ranges from minimum 8.37 percent in FY 2060/061 to maximum 10.81 percent in FY 2063/064 among the manufacturing corporations whereas among non-manufacturing corporations, it ranges from minimum 3.95 percent in FY 2059/60 to maximum 8.08 percent in FY 2063/064.

4.11.2 Test of Significance

Student's t-value at 5 percent level of significance computed for the mean values of ACR in each of the corporations of the manufacturing and non-manufacturing groups is as follows:

Ratio	t-value	D.f.	Result
ACR	0.651	3	Not significant

The difference in the mean values of ACR for each of the corporations in the manufacturing and non-manufacturing groups is insignificant.

Similarly, student's t-value at 5 percent level of significance computed for the mean values of ACR of manufacturing and non-manufacturing groups in each if years is as follows:

Ratio	t-value	D.f.	Result
ACR	4.224	8	Not significant

The difference in the mean value of the ACR for the two groups of corporations in each of the year is statistically significant. It means the AR of manufacturing group of corporations in each of the year are significantly greater than that of non-manufacturing ones.

4.12 Findings:

On the basis of data presentation and analysis done in this and previous chapters, the most major findings relating to the study have been presented as follows.

1) Actual sales are more consistent than the budgeted sales in NOC, DDC and AIC. But actual sales are more variable in RDL and NTL as shown by their CV of sales.
2) All the corporations have positive correlation between budgeted and actual sales as shown by their PE(r).
3) Actual production/purchase of AIC and NTL are more variable as compared to their budgeted figures.
4) In RDL there is no positive correlation between the target and actual production which is further proved by the negative regression lines.
5) The least square straight line trend of profit shows that most of the enterprises will suffer losses if the present situation is allowed to prevail.

6) The enterprises do not have clear cut practice of managing cost and separating them into fixed and variable portions for their better management.

7) Cost volume profits are not considered while setting plan because many of the enterprises have suffered from operating loss. If there is any profit in some years that is negligible.

8) The enterprises are suffering from high operational losses as indicated by their flexible budgets.

9) The two groups of corporations manufacturing and non-manufacturing do not differ in respect of their sales and production achievement, profitability and cost maintenance in each of the corporations.

10) The manufacturing and non-manufacturing corporations differ significantly as per ACR in each of the years. It means manufacturing corporations have high administrative cost ratio than those of non-manufacturing ones in each of the years.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Public enterprises in Nepal established in order to prepare infrastructure services to produce the required goods in the country, to increase export items, to help in controlling price situation, to create opportunities for employment and to increase government revenues and to contribute significantly in the national development as well as to assist in the countries economic advancement. Different public enterprises, in different economic sectors of the country were established for the development of industrialization. In this connection, most of the Nepalese manufacturing enterprises and non-manufacturing enterprises play crucial role in rapid growth of economic and industrial activities. But the performance of Nepalese public enterprises are in vary unsatisfactory position. Most of the Nepalese public enterprises have no clear cut specific goals and objective setting. There is no any concept of effective and attractive planning and lack of skilled planning expert. There exists the greater communication and co-ordination gap between different levels of management even the higher level management are not sensitive to bring better co-ordination among various departments operating under these enterprises. In such an environment the ideas of comprehensive profit planning and controlling will be an effective treatment for these enterprise to improve their overall efficiency and profitability. The profit planning and control is not a technique to rescue from the unfavorable environment rather it helps public enterprises to improve overall aspects of their operations. Profit planning is the lifeblood of the organization which not only keeps it alive but also assures the future and creates the soundness on it. The profit planning and control means the development and acceptance of objectives and goals and moving on organization efficiently to achieve the objective and goals. For profit planning

purposes, enterprises objectives and specific budget goals should represent realistic enterprises but the government interference does not provide the opportunity of realistic expectations in enterprises. So that, these enterprises are bearing huge losses. The concept of PPC is of equal significance whether the firm is business or not it is equally useful for the top level management as well as lower level management. So that, every type of public enterprises should try to develop the profit planning without any unrealistic and undue conservation or irrational optimism. The present study has examined the application if profit planning in Nepalese public enterprises. It also focuses on the investigation whether the achievements in the manufacturing and non-manufacturing public enterprises differ significantly or not.

The data have been gathered for a period of five years from FY 2059/060 to FY 2063/64. The earlier years, before 2059/060 could not be included in the study because of the limitation of various resources. Similarly, the years after 2063/64 are not included in the study because data were available only up to 2063/64 at the time of conducting this study. For the purpose of this study, altogether five enterprises in public sector were selected as a sample. Among them, two corporations from manufacturing sector and another three from the non-manufacturing sector. The corporations selected in this study represent 15 percent in the manufacturing sector and 10 percent in the non-manufacturing sector. And, the data required to complete this study have been gathered from the corporation's annual report and from the various issues of the annual report of the Auditor General published by the office of the Auditor General, His Majesty's Government of Nepal.

Analytical and descriptive design has been used for the research. Statistical tools like percentage, mean, standard deviation, coefficient of variation, correlation and regression have been used to analyze the data.

Similarly, the accounting tools budgetary analysis, cost behaviour analysis, cost volume profit analysis, flexible budgeting etc. have also been used. The result received from such an analysis have been further analyzed through university

analysis in which, each ratio is examined individually for the two groups of corporation manufacturing and non-manufacturing. Student's t-values are computed in order to test whether the difference between the rations obtained from the two groups are statistically significant or not.

The study has been organized in six main chapters consisting of introduction, conceptual framework, research methodology, and presentation of data, analysis of data and summary conclusion and recommendation. Related literatures have been reviewed which consists of about 44 books, 7 periodicals and 5 dissertations. Review of literature have been made mainly on three areas i.e. the concept and procedure of planning, brief profiles of selected enterprises and a review of previous researches in the field of this study.

5.2 Conclusion

The public enterprises understudy have been suffered from a number of internal and external problems cropping up during course of formulating and implementing the profit plans. Analyzing in depth, the present practice of profit planning in the five enterprises, the study concludes the following:

1) The enterprises studied have not been able to generate work efficiency and financial capability. They are still dependent upon government protection and subsides.
2) There is no adequate and clear cut co-ordination among various units in the organizations.
3) Objectives of the enterprises are controversial. There is conflict between profit and social goals.
4) In the perception of manager they are interested to achieve desired objectives, but in reality it is becoming only night dream.
5) HMG intervention through rules and regulation is prevailing.
6) There is inadequate planning of profits due to lack of planning experts.
7) Planning system has been unnecessarily centralized.

8) There is lack of entrepreneurship and commercial concept in overall operation of the enterprise.

9) No efforts of market research have been launched.

10) The plans are based on adhoc and unrealistic forecasts.

11) There is red-tapism and delay in the implementation phase as shown by the achievements too below than the targets.

12) There is no sense of cost management as the costs have not been diagnosed as controllable and non-controllable.

13) Marginal costing, Break even analysis, flexible budgeting etc. were not considered while setting the plan.

14) However, generally, manufacturing corporations seem better as per RAS, RAP, and CMR and non-manufacturing corporations seem stronger as per PMS, ROTA, BER and ACR. But the t-values computed indicate that non of these groups differ significantly to each other. Yet the t-values computed reveal that in each of the years two groups differ significantly as per their only ACR.

5.3 Recommendations

Following points can be recommended to improve the practice of developing and implementing the profit plans in Nepalese enterprises.

1) PEs must be formulated clear cut goals, objectives, polices long term plan and prepared program etc. sales and purchase/production and must be prepared on realistic basis responsible a committed to accomplish them with in the specific period time.

2) External variables should be adequately evaluated to match the internal strength and weaknesses while developing the profit plan.

3) All the managerial level personnel most be participated in developing the profit planning.

4) Objectives should be clearly defined and communicated to all the employees for maximizing their interest towards it.

5) To eliminate red-tapism, unnecessary formalities should be avoided which created delays in decision making and functioning.

6) Exports should be hired while developing effective profit planning.

7) General Managers or executive directors should be appointed on the basis of qualifications and the professional people should have the right on these positions.

8) Price fixation and other managerial decisions should be free of government intervention.

9) All the possible tools of analysis such as CVP analysis, flexible budgeting, forecasting should be considered while preparing profit plan.

10) Separate costing section should be installed so as to provide relevant costing data while setting the plans.

11) Proper motivational program and reward and punishment system must be conducted.

12) Both the groups of corporations should improve themselves to obtain managerial competence and to discharge their duties successfully since both of them are inefficient as indicated by various ratios computed in the study.

13) Finally, a systematic approach should be made towards comprehensive profit planning. This can contribute to increase the profitability of enterprises.

BIBLIOGRAPHY

BOOKS:

- Agrawal, G.R., (1985), **Cost Control System and Cost Consciousness in Enterprise Personality,** Center for Economic Development and Administration, T.U. Kirtipur, Kathmandu.
- Agrawal, G.R; (1985), **Emerging Concept in the Nepalese Management and Administration,** T.U. Kritipur, Kathmandu.
- Andrews, Kenneth R; (1971), **The Concept of Corporate Strategy;** Bombay Taraporevala. Publishing Industries.
- Baker, Morton and Jacobson Lyle E (1964), **Cost Accounting : A Managerial Approach,** Kogakusha Co. Ltd. Tokyo
- Bhattacharya SK and Dearden, John. (1977), **Accounting for Management,** Vikash publishing House Pvt. Ltd. New Delhi
- Bierman, Harald Jr and Dyakman, Thomas R. (1976), **Managerial Cost Accounting** 2nd, ed. MacMillan Co. New York.
- Bigg, Watter W. (1957), **Cost Accounts** 7th ed. Mac Donald and Evans Ltd. London
- Black, Home A and Champion John C. (1961), **Accounting in Business Decision; Theory, Method and Like,** Prentice Hall Inc. Englewood Cliff NJ.
- Dean, Joel, (1951), **Managerial Economic** Prentice Hall, New Delhi.
- Divis, Keith and Blomstrom, Robert L., (1961), **Business and Society: Environment and Responsibility,** Prentice Hall Inc. Englewood Cliff NJ.
- Drucker, Peter F. (1993), **Management: Tasks, Responsibilities and Practices,** Allied Publisher Private Ltd; New Delhi.
- Drucker, Peter F. (1993), **Managing for the future the 19908 Beyond,** Tata McGraw. Hill Publishing Company. Ltd; New Delhi.

- Franklin, E. Folts. (1983), **Introduction to Industrial Management:** Text, Cases and problems, Fifth Edition, Tata. McGraw-Hill Publishing Co. Ltd; Ny.
- Gilmore, FF and Brandenberg, RG.; (1978), Anatomy of Corporate Planning" **Business Strategy Selected Readings,** Ed. H. Igor Ansff, Penguin Books, USA.
- Goyal, Shiva N and Man Mohan, (1990), **Principles of Management Accounting,** 6th Edition, Shahitya Bhawan, Agra.
- Gray, Jack and Rickette, Don. (1982), **Cost and Managerial Accounting** McGraw Hill Co; New York.
- Gupta, SP. (1992), **Management Accounting** Shahitya Bhawan, Agra, India.
- Jain, SP and Narang, KL. (1987), **Cost Accounting Principles and Practice,** 11th Revised Edition, Kalyani Publishing, New Delhi.
- Jawaharlal, (1996), **Cost Accounting,** 2nd Edition, Tata McGraw Hill Publishing Company Ltd. New Delhi.
- Joshi, Shyam. (2050 B.S.) **Managerial Economics,** Taleju Prakashan, Kathmandu.
- Karna, AL. (1985), **Lectures on Business Policy, A Conceptual and Analytical Framework,** T.U., Kirtipur, Kathmandu.
- Keller, Isac Wayne and Ferrara, William L. **Management Accounting for Profit Control,** 2nd Ed. McGraw Hill Publishing New York.
- Khan, My and Jain PK. (1993), **Management Accounting,** Tata McGraw Hill Publishing Company Limited, New Delhi.
- Kothari, C.R. (1990), **Research Methodology Method and Techniques,** New Delhi, Wiley Eastern Limited.
- Kulkarni, PV. **Financial Management, 3rd Ed., Himalayan Publishing House, Bombay.**
- Lynch, Richard M and Williamson, Robert W., (1989), **Accounting for Management Planning and Control,** Third edition, Tata McGraw-Hill Publishing Company Ltd. New Delhi.

- Markidakis, C Steven and Wheelright; (1985), **Forecasting Method and Application,** Willey Publication, New York.
- Matz. A, Curry, O.J. and Usry, M.F. (1972), **Cost Accounting: Planning and Control,**5th Edition, South Western Publishing Company Ohio.
- Mee, F. John. (1965), "**Scientific Management and Economic Development",** International Handbook of Management, Ed. Karl E. Ettinger, McGraw Hill Book Company, USA.
- Narain, Laxmi, (1972), **Principles and Practice of Public Enterprise Management,** 4th Edition, S. Chand and Co. New Delhi.
- Neuner, John Jw. (1958), **Cost Accounting Principles and Practice,** 5th edition, Richard D Irwin Inc., Illinois.
- Nickerson. Clarence B. **Managerial Cost Accounting and Analysis:** Text Problem and Cases, 2nd Edition, McGraw – Hill Company.
- Pandey, IM, Management Accounting, (1986), **A Planning and Control Approach,** Vikash Publishing House, New Delhi.
- Pradhan, R.S. Publish Corporation of Nepal, (1986), **A Study of Financial Ratios,** National Book Organization, New Delhi.
- Ruswinckel, John W and Lawrence, WB. (1955), **Cost Accounting,** 4th ed.; Prentice Hall Inc, New York.
- Specthrie, Samuel Waldo,(1963), **Basic Cost Accounting,** 2nd ed; Prentice Hall, Englewood Cliff.
- Sukla, Mc amd Grewal, Ts. (1970) **Cost Accounts,** 4th ed; S. Chand and Co; New Delhi.
- Swaminathan, L. (1978), **Lectures on Costing,** 2nd Edition, S. Chand and Company, Ram Nagar, New Delhi.

- Ways, M. (1978), "Tomorrow's Management: A More Adventurous Life in a Free form Corporation", **Business Strategy, Selected Readings,** Ed. H. Igor Ansoff, Penguin Books, USA.
- Welsch, Glenn A, Hillton, Ronald W and Gordon, Paul N. Budgeting, (1992), **Profit Planning and Control,** 5th Edition, Prentice Hall of India Pvt. Ltd; New Delhi.
- Willsmore, A.W. (1960), **Business Budgets and Budgetary Control,** 4th Ed., London.
- Wlesch, Glenn A. (1984), **Budgeting, Profit Planning and Control,** 4th Edition, Prentice Hall of India Pvt. New Delhi.

NEWS PAPERS AND MAGAZINES

- Gupta, SP. "Enhancing Managerial Competence in Nepal", **Management Reporter,** A Magazine of Management and Development, Mahendra Morang Adarsha Multiple Campus, Biratnager, Vol. 1, Issue 1, 1977.
- **Management Review,** The Journal of American Management Association March, 1998, June, 1998.
- Pathak, JK. "Price Police Decision in Nepalese Public Enterprises", **Banijya Sansar,** T.U. Kirtipur, Vol. 13, Issue 8, 2048.
- Pathak, JK. "Some Observations on Management Problem of Public Enterprises in Nepal", **Public Administration Journal,** 19885, May, 1987.
- Pradhanang, UB. "Management Education in General and Nepalese context" **Management Dynamics: A Journal of Management and Economics,** Shanker Dev Campus. Vol. 7, No. 1 1996.
- **Targets and Performances of Public Enterprises,** His Majesty's Government, Ministry if Finance, 1998 and 1999.
- The Rising Nepal, Daily, Gorkhapatra Corporation, Kathmandu.

DISSERTATIONS

- Eiha, Khagendra Prasad, (1995), **Profit Planning in Public Enterprises in Nepal, A Comparative Study of Royal Drugs Limited and Herbs Production Processing Company,** An Unpublished Dissertation Submitted to Central Department of Management, T.U. Kirtipur.
- Neuoane, Nur Nidhi, (1995), **Profit Planning and Control in Manufacturing Public Exteriorize of Nepal: A Case, Study of Heatuda Cement Industries Ltd.,** An Unpublished Dissertation Submitted to Central Department of Management, TU. Kirtipur.
- Parjuli, Agnidhar, (1991), **A Study of Profit Planning in Manufacturing Public Enterprises in Nepal,** An Unpublished Dissertation Submitted to Central Department of Management, T.U. Kirtipur.
- Paudel, Narayan Prasad, (1996), **Profit Planning in Manufacturing Public Enterprises in Nepal, A Comparative Study of Himal Cement Company Ltd. And Heatuda cement Industries Ltd.,** An Unpublished Dissertation Submitted to Central Department of Management, T.U., Kirtipur.
- Sharma Poudel, Naurag, (2006), **Management Information System in Nepal Telecom**, MBS, Shankar Dev Campus, Kathmandu.
- Subedi, Keshab, (1999), **A Study on Profit Planning in Manufacturing and Non-Manufacturing Public Enterprises of Nepal,** An Unpublished Dissertation Submitted to Central Department of Management, T.U. Kirtipur.
- Tharu, Man Shingh, (2006), **Profit Planning and Control, A Case Study of Nepal Telecom,** MBS, BalKumari College, Narayangarh.
- Wagle, Pujun, (2006), **A case study of Profit Planning and Control in Nepal Food Corporation**, MBS, Shankar Dev Campus, Kathmandu.

APPENDIX – 1

Budgeted and Actual Sales of NOC

FY	Budget (X)	Act (Y
2059/060	45.7664	45.9
2060/061	51.1201	52.8
2061/062	58.1809	58.2
2062/063	66.5344	63.5
2063/064	76.1622	73.2
Total	297.764	293.

For Budgeted Sales (X)

(i) Mean $(\overline{X}) = \frac{\sum X}{n} = \frac{297.764}{5} = 59.5528$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (X - \overline{X})^2}{n}} = \sqrt{\frac{587.6722}{5}} = 10.84133$

(iii) CV $= \frac{\sigma}{X} \times 100 = \frac{10.84133}{59.5528} \times 100 = 18.20\%$

For Actual Sales (Y)

(i) Mean $(\overline{Y}) = \frac{\sum Y}{n} = \frac{293.9014}{5} = 58.78028$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (Y - \overline{Y})^2}{n}} = \sqrt{\frac{431.78048}{5}} = 10.84133$

(iii) CV $= \frac{\sigma}{X} \times 100 = \frac{9.2928}{59.78028} \times 100 = 15.81\%$

Karl Pearson's Coefficient of Correlation (r)

$$r_{xy} = \frac{\sum uv}{\sqrt{\sum u^2 . \sum v^2}} = \frac{500.9552}{\sqrt{587.6722 \times 431.78.48}} = 0.99$$

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

$$= 0.6745 \times \frac{1 - (0.99)^2}{\sqrt{5}}$$

$$= 0.006$$

Probable Error and Correlation Coefficient:

The probable error of the correlation coefficient is the basis for the interpretation of its value. It is defined by

$$Pe = 0.6745 \times \frac{1 - r^2}{\sqrt{N}}$$

$$= 0.6745se$$

Where,

Pe = Probable error of correlation coefficient
N = Number of pairs of observations.

Regression Line (Y on X)

$$Y - \overline{Y}_{xy} = r \frac{\sigma_y}{\sigma_x} (X - \overline{X})$$

$$Y - 587803 = 0.99 \times \frac{92928}{108413.3} \times (X - 595528)$$

$$Y = 0.84859X + 82442.4$$

APPENDIX – 2

Budgeted and Actual Sales of DDC

FY	Planned (X)	Act (Y
2059/060	499.07	444
2060/061	500.21	585
2061/062	525.14	531
2062/063	582.67	569
2063/064	602.66	550
Total	2709.75	258

For budgeted Sales (X)

(i) Mean $(\bar{X}) = \frac{\sum X}{n} = \frac{2709.75}{5} = 541.95$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (X - \bar{X})^2}{n}} = \sqrt{\frac{9207.3206}{5}} = 42.9123$

(iii) CV $= \frac{\sigma}{X} \times 100 = \frac{42.9123}{541.95} \times 100 = 7.92\%$

For Actual Sales (Y)

(i) Mean $(\bar{Y}) = \frac{\sum Y}{n} = \frac{2582.52}{5} = 516.504$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (Y - \bar{Y})^2}{n}} = \sqrt{\frac{10434.7617}{5}} = 45.6831$

(iii) CV $= \frac{\sigma}{\bar{Y}} \times 100 = \frac{45.6831}{516.504} \times 100 = 8.85\%$

Karl Pearson's Coefficient of Correlation (r)

$$r_{xy} = \frac{\sum uv}{\sqrt{\sum u^2 . \sum v^2}} = \frac{8374.3288}{\sqrt{9207.3206 \times 10434.7617}} = 0.85$$

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

$$= 0.6745 \times \frac{1- 0.7225}{\sqrt{5}}$$

$$= 0.084$$

Regression Line (Y on X)

$$Y - \bar{Y} = r \frac{\sigma_y}{\sigma_x} (X - \bar{X})$$

$$Y - 51650400 = 0.85 \times \frac{4568310}{4291230} \times (X - 54195000)$$

$$Y = 0.90488X + 2610235$$

APPENDIX - 3

Budgeted and Actual Sales of RDL

(in 000000 Rs.)

FY	Planned (X)	Act (Y
2059/060	160	86.
2060/061	165	97.
2061/062	170	124
2062/063	170	119
2063/064	170	127
Total	835	555

For budgeted Sales (X)

(i) Mean $(\bar{X}) = \frac{\sum X}{n} x = \frac{835}{5} = 167$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (X - \bar{X})^2}{n}} = \sqrt{\frac{80}{5}} = 4$

(iii) CV $= \frac{\sigma}{X} \times 100 = \frac{4}{167} \times 100 = 2.34\%$

For Actual Sales (Y)

(i) Mean $(\bar{Y}) = \frac{\sum Y}{n} = \frac{555.282}{5} = 111.0564$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (Y - \bar{Y})^2}{}} = \sqrt{1312.22475} = 16.20$

n 5

(iii) $CV = \frac{\sigma}{\overline{Y}} \times 100 = \frac{16.20}{111.0564} \times 100 = 14.59\%$

Karl Pearson's Coefficient of Correlation (r)

$$r_{xy} = \frac{\sum uv}{\sqrt{\sum u^2 . \sum v^2}} = \frac{313.441}{\sqrt{80 \times 1312.22475}} = 0.97$$

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

$$= 0.6745 \times \frac{1- 0.93586}{\sqrt{5}}$$

$$= 0.019$$

Regression Line (Y on X)

$$Y - \bar{Y} = r \frac{\sigma_y}{\sigma_x} (X - \bar{X})$$

$$Y - 111056400 = 0.9674 \times \frac{16200000}{4000000} \times (X - 167000000)$$

$$Y = 3.91797X + 543244590$$

APPENDIX - 4

Budgeted and Actual Sales of AIC

(in 000 MT)

FY	Planned (X)	Act (Y
2059/060	129.348	77.
2060/061	134.235	94.
2061/062	131.286	73.
2062/063	101.787	68.
2063/064	84.559	49.
Total	581.215	363

For budgeted Sales (X)

(i) Mean $(\overline{X}) = \frac{\sum X}{n} = \frac{581.215}{5} = 116.243$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (X - \overline{X})^2}{n}} = \sqrt{\frac{1934.5966}{5}} = 19.6703$

(iii) CV $= \frac{\sigma}{X} \times 100 = \frac{19.6703}{116.243} \times 100 = 16.92\%$

For Actual Sales (Y)

(i) Mean $(\overline{Y}) = \frac{\sum Y}{n} = \frac{363.382}{5} = 72.6764$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (Y - \overline{Y})^2}{}} = \sqrt{1056.9322} = 14.539134$

n 5

(iii) $CV = \frac{\sigma}{\overline{Y}} \times 100 = \frac{14.539134}{72.6764} \times 100 = 20\%$

Karl Pearson's Coefficient of Correlation (r)

$$r_{xy} = \frac{\sum uv}{\sqrt{\sum u^2 . \sum v^2}} = \frac{1274.4062}{\sqrt{1934.5966 \times 1056.9322}} = 0.89$$

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

$$= 0.6745 \times \frac{1- 0.7943}{\sqrt{5}}$$

$$= 0.062$$

Regression Line (Y on X)

$$Y - \bar{Y} = r \frac{\sigma_y}{\sigma_x} (X - \bar{X})$$

$$Y - 72676.4 = 0.89123 \times \frac{14539.134}{19670.30} \times (X - 116243)$$

$$Y = 0.658745X + 3898.0987$$

APPENDIX - 5

Budgeted and Actual Sales of NTL

(in 0000000 MT)

FY	Planned (X)	Act (Y
2059/060	110.36	92.
2060/061	167.51	100
2061/062	144.58	90.
2062/063	147.50	76.
2063/064	101.00	78.
Total	670.95	438

For budgeted Sales (X)

(i) Mean $(\overline{X}) = \frac{\sum X}{n} = \frac{670.95}{5} = 134.19$

(ii) SD $(\sigma) = \sqrt{\frac{\sum(X - \overline{X})^2}{n}} = \sqrt{\frac{3064.7756}{5}} = 24.758$

(iii) CV $= \frac{\sigma}{X} \times 100 = \frac{24.758}{134.19} \times 100 = 18.45\%$

For Actual Sales (Y)

(i) Mean $(\overline{Y}) = \frac{\sum Y}{n} = \frac{438.46}{5} = 87.692$

(ii) SD $(\sigma) = \sqrt{\frac{\sum(Y - \overline{Y})^2}{}} = \sqrt{413.5062} = 9.094$

n 5

(iii) $CV = \frac{\sigma}{\overline{Y}} \times 100 = \frac{9.094}{87.692} \times 100 = 10.37\%$

Karl Pearson's Coefficient of Correlation (r)

$$r_{xy} = \frac{\sum uv}{\sqrt{\sum u^2 . \sum v^2}} = \frac{502.4544}{\sqrt{3064.7756 \times 413.5062}} = 0.4463$$

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

$$= 0.6745 \times \frac{1- 0.19918}{\sqrt{5}}$$

$$= 0.2415$$

Regression Line (Y on X)

$$Y - \overline{Y} = r \frac{\sigma_y}{\sigma_x} (X - \overline{X})$$

$$Y - 876920000 = 0.4463 \times \frac{90940000}{247580000} \times (X - 1341900000)$$

$$Y = 0.65693862 + 0.164X$$

APPENDIX - 6

Budgeted and Actual Purchase of NOC

(in 000 KL)

FY	Planned (X)	Actual (Y)
2059/060	471.506	459.791
2060/061	520.460	526.293
2061/062	593.445	594.771
2062/063	671.400	637.381
2063/064	768.353	742.017
Total	3025.164	2960.2508

For budgeted Sales (X)

(i) Mean $(\overline{X}) = \frac{\sum X}{n} = \frac{3025.164}{5} = 605.033$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (X - \overline{X})^2}{n}} = \sqrt{\frac{56194.3354}{5}} = 106.01$

(iii) CV $= \frac{\sigma}{X} \times 100 = \frac{106.01}{605.033} \times 100 = 17.52\%$

For Actual Sales (Y)

(i) Mean $(\overline{Y}) = \frac{\sum Y}{n} = \frac{2960.253}{5} = 592.0506$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (Y - \overline{Y})^2}{}} = \sqrt{46368.8826} = 96.30045$

n 5

(iii) $CV = \frac{\sigma}{\overline{Y}} \times 100 = \frac{96.30045}{592.0506} \times 100 = 16.27\%$

Karl Pearson's Coefficient of Correlation (r)

$$r_{xy} = \frac{\sum uv}{\sqrt{\sum u^2 . \sum v^2}} = \frac{50691.03}{\sqrt{56194.3354 \times 46368.8826}} = 0.993$$

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

$$= 0.6745 \times \frac{1- 0.98615}{\sqrt{5}}$$

$$= 0.0042$$

Regression Line (Y on X)

$$Y - \overline{Y} = r \frac{\sigma_y}{\sigma_x} (X - \overline{X})$$

$$Y - 592050.60 = 0.99305 \times \frac{96300.45}{106010} \times (X - 605033)$$

$$Y = 46253 + 0.90209X$$

APPENDIX - 7

Budgeted and Actual Purchase of NTL

(in 000000 Rs.)

FY	Planned (X)	Actual (Y)
2059/060	947.60	680.69
2060/061	1367.70	844.64
2061/062	983.80	610.65
2062/063	910.0	600.591
2063/064	1280.0	477.484
Total	5489.10	3214.055

For budgeted Purchase (X)

(i) Mean $(\overline{X}) = \frac{\sum X}{n} = \frac{5489.10}{5} = 1097.82$

(ii) SD $(\sigma) = \sqrt{\frac{\sum(X - \overline{X})^2}{n}} = \sqrt{\frac{176867}{5}} = 188.08$

(iii) CV $= \frac{\sigma}{X} \times 100 = \frac{188.08}{1097.82} \times 100 = 17.13\%$

For Actual Purchase (Y)

(i) Mean $(\overline{Y}) = \frac{\sum Y}{n} = \frac{3214.055}{5} = 642.811$

(ii) SD $(\sigma) = \sqrt{\frac{\sum(Y - \overline{Y})^2}{}} = \sqrt{72319.60} = 120.266$

n 5

(iii) $CV = \frac{\sigma}{\overline{Y}} \times 100 = \frac{120.266}{642.811} \times 100 = 18.71\%$

Karl Pearson's Coefficient of Correlation (r)

$$r_{xy} = \frac{\sum uv}{\sqrt{\sum u^2 . \sum v^2}} = \frac{32257.182}{\sqrt{176867.72 \times 72319.65}} = 0.268$$

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

$$= 0.6745 \times \frac{1- 0.071573}{\sqrt{5}}$$

$$= 0.28$$

Regression Line (Y on X)

$$Y - \overline{Y} = r \frac{\sigma_y}{\sigma_x} (X - \overline{X})$$

$$Y - 642811000 = 0.2675 \times \frac{120266000}{18808000} \times (X - 1097820000)$$

$$Y = 458028475 + 0.17105X$$

APPENDIX - 8

Budgeted and Actual Purchase of AIC

(in 000 MT)

FY	Planned (X)	Actual (Y)
2059/060	65.578	104.839
2060/061	77.843	83.041
2061/062	94.214	92.651
2062/063	73.701	70.701
2063/064	68.258	64.758
Total	379.594	416

For Budgeted Purchase (X)

(i) Mean $(\overline{X}) = \frac{\sum X}{n} = \frac{379.594}{5} = 75.9188$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (X - \overline{X})^2}{n}} = \sqrt{\frac{508.9532}{5}} = 10.10$

(iii) CV $= \frac{\sigma}{X} \times 100 = \frac{10.10}{75.9188} \times 100 = 13.29\%$

For Actual Purchase (Y)

(i) Mean $(\overline{Y}) = \frac{\sum Y}{n} = \frac{416}{5} = 83.20$

(ii) $SD\ (\sigma) = \sqrt{\frac{\sum(Y - \bar{Y})^2}{n}} = \frac{1053.9473}{5} = 14.52$

(iii) $CV = \frac{\sigma}{\bar{Y}} \times 100 = \frac{14.52}{83.20} \times 100 = 17.45\%$

Karl Pearson's Coefficient of Correlation (r)

$$r_{xy} = \frac{\sum uv}{\sqrt{\sum u^2 . \sum v^2}} = \frac{117.8245}{\sqrt{508.95 \times 1053.95}} = 0.161$$

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

$$= 0.6745 \times \frac{1-(0.169)^2}{\sqrt{5}}$$

$$= 0.294$$

Regression Line (Y on X)

$$Y - \overline{Y} = r \frac{\sigma_y}{\sigma_x} (X - \overline{X})$$

$$Y - 83200 = 0.294 \times \frac{14520}{10100} \times (X - 75920)$$

$$Y = 51111.55 + 0.42266X$$

APPENDIX - 9

Budgeted and Actual Production of DDC

(in 000000 KLtrs.)

FY	Planned (X)	Actual (Y)
2059/060	51.364	56.973
2060/061	55.294	62.060
2061/062	72.523	68.851
2062/063	80.118	72.433
2063/064	82.774	71.536
Total	342.073	331.853

For Budgeted Purchase (X)

(i) Mean $(\bar{X}) = \frac{\sum X}{n} = \frac{342.073}{5} = 68.4146$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (X - \bar{X})^2}{n}} = \sqrt{\frac{822.9141}{5}} = 12.829$

(iii) CV $= \frac{\sigma}{X} \times 100 = \frac{12.829}{68.4146} \times 100 = 18.75\%$

For Actual Purchase (Y)

(i) Mean $(\bar{Y}) = \frac{\sum Y}{n} = \frac{331.853}{5} = 66.3706$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (Y - \bar{Y})^2}{n}} = \sqrt{\frac{176.4828}{5}} = 5.94$

(iii) CV $= \frac{\sigma}{\bar{Y}} \times 100 = \frac{5.94}{66.3706} \times 100 = 8.95\%$

Karl Pearson's Coefficient of Correlation (r)

$$r_{xy} = \frac{\sum uv}{\sqrt{\sum u^2 . \sum v^2}} = \frac{372.1062}{\sqrt{822.9141 \times 176.4828}} = 0.976$$

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

$$= 0.6745 \times \frac{1- 0.9534}{2.236068}$$

$$= 0.014$$

Regression Line (Y on X)

$$Y - \overline{Y} = r \frac{\sigma_y}{\sigma_x} (X - \overline{X})$$

$$Y - 66370600 = 0.9764 \times \frac{5940000}{12829000} \times (X - 68414600)$$

$$Y = 35441292.0 5 + 0.4521X$$

APPENDIX - 10

Budgeted and Actual Production of RDL

(in 000000 Rs.)

FY	Planned (X)	Actual (Y)
2059/060	256.220	190.744
2060/061	180.000	168.101
2061/062	162.500	224.782
2062/063	211.309	205.856
2063/064	202.357	203.877
Total	1012.386	993.36

For Budgeted Purchase (X)

(i) Mean $(\bar{X}) = \frac{\sum X}{n} = \frac{1012.386}{5} = 202.48$

(ii) SD $(\sigma) = \sqrt{\frac{\sum (X - \bar{X})^2}{n}} = \sqrt{\frac{5069.7}{5}} = 31.84$

(iii) CV $= \frac{\sigma}{X} \times 100 = \frac{31.84}{202.48} \times 100 = 15.72\%$

For Actual Purchase (Y)

(i) Mean $(\bar{Y}) = \frac{\sum Y}{n} = \frac{993.36}{5} = 198.672$

(ii) $SD\ (\sigma) = \sqrt{\frac{\sum(Y - \bar{Y})^2}{n}} = \frac{1757.88}{5} = 18.75$

(iii) $CV = \frac{\sigma}{\bar{Y}} \times 100 = \frac{18.75}{198.672} \times 100 = 9.44\%$

Karl Pearson's Coefficient of Correlation (r)

$$r_{xy} = \frac{\sum uv}{\sqrt{\sum u^2 . \sum v^2}} = \frac{-719.93}{\sqrt{5069.70 \times 1757.88}} = 0.976$$

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

$$= 0.6745 \times \frac{1- 0.05816}{\sqrt{5}}$$

$$= 0.2841$$

Regression Line (Y on X)

$$Y - \overline{Y} = r \frac{\sigma_y}{\sigma_x} (X - \overline{X})$$

$$Y - 198672000 = - .2412 \times \frac{18750000}{31840000} \times (X - 202480000)$$

$$Y = 227431918 .34 + 0.14204X$$

APPENDIX - 11

Profit Pattern of NOC

(in 000000 Rs.)

FY	Profit (X)	X^2	Y^2	XY
2059/060	2453.65	-2	4	-4907.30
2060/061	583.16	-1	1	-583.16
2061/062	4684.70	0	0	0
2062/063	(280.00)	1	1	-280.00
2063/064	(295.40)	2	4	-590.80
Total	7146.11	0	10	-6361.26

Least Square Trend $Y = a + bx$

Where,

$$a = \frac{\sum y}{n} = \frac{7146.11}{5} = 1429.222$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{6361.26}{10} = -636.13$$

Then substitute ng the values

$\therefore Y = 1429.22 - 636.13X$

APPENDIX - 12

Profit Pattern of NTL

(in 000000 Rs.)

FY	Profit (X)	X^2	Y^2	XY
2059/060	80.814	-2	4	-161.628
2060/061	174.379	-1	1	-174.379
2061/062	44.704	0	0	0
2062/063	67.567	1	1	67.567
2063/064	55.350	2	4	110.70
Total	422.814	0	10	-157.74

Least Square Trend Y = a + bx

Where,

$$a = \frac{\sum y}{n} = \frac{422.814}{5} = 84.563$$

$$b = \frac{\sum XY}{\sum X^2} = \frac{-157.74}{10} = 15.774$$

Then substituting the values

$\therefore$ Y = 84.563 - 15.774X

APPENDIX - 13

Profit Pattern of AIC

(in 000000 Rs.)

FY	Profit (X)	X^2	Y^2	XY
2059/060	(31.670)	-2	4	63.3405
2060/061	(69.18)	-1	1	69.1809
2061/062	(505.050)	0	0	0
2062/063	75.67575	1	1	75.67575
2063/064	114.140	2	4	228.28228
Total	-416.08525	0	10	436.47943

Least Square Trend Y = a + bx

Where,

$$a = \frac{\sum y}{n} = \frac{416.08528}{5} = -83.21705$$

$$b = \frac{\sum XY}{\sum X^2} = -\frac{436.47943}{10} = 43.647942$$

Then substituting the values

$\therefore$ Y = -83.22 + 43.65X

APPENDIX - 14

Profit Pattern of DDC

(in 000000 Rs.)

FY	Profit (X)	X^2
2059/060	38.694	-2
2060/061	10.662	-1
2061/062	(5.914)	0
2062/063	(31.801)	1
2063/064	(0.151)	2
Total	11.49	0

Least Square Trend Y = a + bx

Where,

$a = \frac{\sum y}{n} = \frac{11.49}{5} = 2.298$

$b = \frac{\sum XY}{\sum X^2} = - \frac{-120.153}{10} = -12.015$

Then substituting the values

$\therefore Y = 2.298 - 12.015X$

APPENDIX - 15

Profit Pattern of RDL

(in 000000 Rs.)

FY	Profit (X)	X^2
2059/060	(1.662)	-2
2060/061	(1.762)	-1
2061/062	(1.110)	0
2062/063	2.090	1
2063/064	2.405	2
Total	-0.039	0

Least Square Trend Y = a + bx

Where,

$a = \frac{\sum y}{n} = \frac{0.039}{5} = -0.0078$

$b = \frac{\sum XY}{\sum X^2} = - \frac{11.986}{10} = 1.1986$

Then substituting the values

$\therefore Y = -0.0078 + 1.1986X$