COMPARATIVE PROFITABILITY ANALYSIS OF DAIRY INDUSTRIES IN CHITWAN DISTRICT

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RECOMMENDATION

This is to certify that the thesis

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has been prepared as approved by this Department in the prescribed format of the Faculty of Management. This thesis is forwarded for examination.

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VIVA-VOCE SHEET

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DECLARATION

I hereby declare that the thesis entitled "Comparative Profitability Analysis Dairy Industries in Chitwan District" submitted to Birendra Multiple Campus, Faculty of Management, Tribhuvan University is my original work. It is done in the form of partial fulfillment of requirement for the degree of Master of Business Studies (M.B.S.) under the supervision and guidance of Mr. Sushil Dahal, Lecturer of Birendra Multipule Campus, Bharatpur.

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LIST OF ABBREVIATIONS

BEP	:	Break Even Point
C.V	:	Coefficient of Variation
CM	:	Contribution Margin
CVP	:	Cost Volume Profit
DOL	:	Degree of Operating Leverage
EBIT	:	Earning Before Interest and Tax
F/Y	:	Fiscal Year
FC	:	Fixed Cost
MBS	:	Master of Business Studies
MOS	:	Marginal of Safety
P/V	:	Profit Volume
PPC	:	Profit Planning Controlling
RS	:	Rupees
S.D	:	Standard Deviation
SPPU	:	Selling Price per Unit
VC	:	Variable Cost
VCPU	:	Variable Cost per Unit

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Profit is the primary measurement of business in any economy. If firm is not able to earn profit is fails to hold the capital for long period. When business firm cannot hold capital. It cannot secure and return other sources such as manpower, material and machine etc. in the other words the more profitable firm enterprise are more attractive to the hold of the available capital. This firm can attract capital, which they need to buy other resources. Here is the key capital and other resources are scare they are allocated to the profit makers in roughly descending order of their profit potential.

Usually, profit doesn't just happen. Profit is managed when a management makes a plan of its profit performance that is known as profit planning. Profit planning is a part of overall planning process of an organization. Before making an intelligent approach to the managerial process of profit planning, it is importance that we understand the management concept of profit. There is several different interpretation of the term of profit. According to an economist, profit is the reward for entrepreneurship for risk taking leader of how labor a might say that has profit is measure of how efficiently labor has produced and that is provides a base for negotiation a wage increase and an investor will view it as a gauge of the return on his/her money. An internal revenue agent might regard it as a base for determining income taxes. An account will explain it simply as the excess if firm's revenue over expending of producing revenue in a given fiscal year.

Cost –Volume –profit analysis is a systematic method of examining the relationship between changes in activity (i.e. output) and changes in total sales revenue, expenses and net profit. As a model of their relationship CVP analysis simplifies the real world conditions that form reality. VCP analysis is subject to a number of underlying assumptions and limitations. Nevertheless, it is a powerful tool for decision-making in certain situations (Drury, 2007).

CVP analysis simplifies the real world conditions that a firm will face. Like most models, which are abstractions from reality, CVP analysis is subject to a number of underlying assumptions and limitations. Nevertheless, it is a powerful tool for decision –making in certain situations (Drury, 2007)

On the other hand numerous people are involved in the production, processing and trading of diary products and this provides employment opportunities for the local people. This is the potentiality of dairy farming but to make this industries as a major pillar which supports not only local people but also as a means to economic development then the role of dairy is necessary because it covered wide range of development services including but not limited to financial services.

1.2 Focus of the Study

Comparative profitability analysis is a systematic method of examining the relationship between change in activity and financial condition of Dairy, such as revenue, expensive and net profit. As a model of these relationships Comparative profit analysis simplifies the real world conditions that a firm will face. CPA is a management accounting tools to show the relationship between the elements of profit analysis and

financial condition. Profit analysis is the function of the selling price of product, demands variable cost, taxes etc. The whole picture of profit analysis is associated with comparative profitability analysis interrelationships. A popular technique to study cost volume profit relationship is break even analysis. Break even analysis in concerned with the study of revenues and costs in relation to sales at which the firm's revenues and total cost will be exactly equal of the net income will be zero. It is a "no profit no loss" situation. The point is a corner stone of profit analysis. The main focus of the study is to analyze the comparative profitability analysis for multi product firm can be explained below.

Sales mix can be defined as the relative combination of two or more products representation in total. It is not only the sales revenue that makes profit. The proportion of the sales contributed by different products greatly changes the amount of profit. Manager tries to achieve that combination or mix that will yield the greatest of profit if a company sales more than one product these may not be equality. Profit will depend upon the ratio of each products sale to total sales revenues. Profit will be greater if high margin items make up a relatively large proportion of total sales them if high margin items make up a relatively large proportion of total sales the if sales consist mostly of low margin items changes in sales mix can cause greater variations in a company's profit. A shift to low profit items can cause the total profit to decrease even though total sales increase. On a contrary, a shift in sales mix from low margin items to high margin items can cause the revenue effect the total profit may increase even through total sales decrease (Bajrachary et al., 2004:260).

So a dynamic management therefore uses CVP analysis is to product the implications of its short term decisions about the fixed cost, variable cost, volume and selling price for its profit plans on a continuous basic.

1.3 Statements of the Problem

The dairy definitely helped the poor people. But this study does not reflect the present situation of diary farmer. Unfortunately diary is not working satisfactorily. Most of them are under heavy bank Loans and are always looking for the nominal grants from the societies or from the government. Besides agricultural there are lot of sectors where local people engaged and sustain their livelihood. Among them livestock is a key component but still this industry is facing hard times. This industry should be promoted not only as a substantial income generating and household food security activities bur also as a means to improve the safety quality, quantity of milk, as a pillar of development. As diary farm sizes have grown due to scale of economy, the frequently of milk collection has dropped. According to the agricultural perspectives of the diary sector will accelerate from 2.9percentage to 5.5percentage by the plan period. How the diary being operated largely dependent on how the diary operation is planned. Poor performance is the outcome of poor planning, controlling and decision making. The key motive of every diary is to make and maximize profit .Profit just does not happen by chance, it is to be management. Cost volume profit analysis is immensely helpful for developing alternative strategies in sales planning and cost estimation.

This study is basically designed to solve the following problems by taking into account the budget rule in the comparative profitability analysis of the diary industry.

1. What sales volume is needed to achieve break even?
2. What sales volume is required to earn desired profit?
3. What will be the relationship between cost volume and profit?
4. What is the volume of margin safety in study period?

1.4 Objectives of the Study

The main objectives of this study is examined comparative profitability analysis of dairy industries in Chitwan district. The other specific objectives of this study are as follows.

1. To analyze sales revenue and Percentage change of overall firm as well as individual product,
2. To analysis of cost plan of dairies.
3. To find out the condition of P/V, Gross profit and Marginal safety ratio of dairies.
4. To show the relationship between cost volume and profit.
5. To find out margin of safety for the study period.

1.5 Limitation of the Study

Because of time and financial constraint this study is only limited in the ward no three and four of Meghauli village Development Jitpure and Ratnanagar tadi. It specially studies about Mukundasen Dugdha Utpadan Sahakari Sastha Meghauli-1,Chitwan, Shree Doman Dugdha Utpadan Sahakari Sastha Ltd. Meghauli -3Jitpure, Chitwan and Shree Jivandhara Dugdha Utpadan Sahakari Sastha Ltd. Ra.Na.Pa.-12

Each and every research has some limitation. Basically not availability of required data and information would be the major limitations of the study. The study has been conducted with the following limitations.

1. This study is based on data of four year from 2064/65 to2067/68.
2. The data used in this study are secondary data, the accuracy of this study is based on the data available from the management of the company.

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3. Due to limited time and resources constrain, these studies will neither the comprehensive non extensive.

1.6 Significance of the Study

Because of the globalization, today market has become very competitive. A few studies has been made in relation to the tools of profit planning in Nepalese context and most of the studies are related to the profit planning and control of the public enterprises where CVP as one of the tools of PPC is hardly studied. This study is significant in the sense that it has treated to study the CVP analysis of the dairy company, which is one of the most important tools of PPC. This study is further significant because it highlight the relationship of CVP as applicable tool of budgeting and it also highlight the sensitivity of cost profit volume variables. The study would be very useful for entrepreneurs, decision makers, researchers and the managers because it deals with the practices of CVP analysis of dairies as a very important tool of PPC.

1.7 Organizationof the Study

This study has divided into five parts introduction review of literature research methodology, presentation and analysis of data and summer and recommendations.

Chapter -1 Introduction

This chapter is introduction frame work that includes background of the study. Focus of the study profitable of the Dairies, statement of the problems objectives of the study. Significance of the study, Limitation of the study and organization of the study.

Chapter -2 Review of the Literature

This chapter will review the existing literature in the relevant area. Mainly it includes reviews of theories and Journal, review of previous research work and research gap.

Chapter -3 Research Methodology

This Chapter deals with the methodology that includes research design sources of data, data collection techniques methods of analysis and research variable.

Chapter -4 Presentation and Analysis Data

This chapter deals with the presentation and analysis of collected data and information for this purpose various analytical tools will be used.

Chapter-5Summary, Conclusion and Recommendations

This chapter will be the final chapter of the study that includes summary of the study, Conclusion and recommendation.

CHAPTER TWO
REVIEW OF LITERATURE

The purpose of reviewing the literature is to develop some expertise in one's area to see what new contribution can be made and to receive some ideas for developing search design. Their relevant finding issues, arguments logics and suggestion. Which will give a glimpse guide line to go further depth of the study. In other words there has to be continuity in search. This continuity in search is ensured by linking the present study with the post research studies.

2.1 Conceptual Frame Work of Comparative Profitability Analysis

2.1.1 Concept of Comparative Profitability

Generally, process of comparing profit of different organization is known as comparative profit. Specially, it used to find out profit and economic condition of different dairies. If we try to solve problems and will give them right suggestions and idea to face with this problems in comparative profit. Profit is known as the part of income of the firms. Profit is the motivation force in the business. Success of business depends on profit. Profit promises to provide satisfaction to consumer. We can simply define the word profit as the primary measurement of successes of management effectiveness in business enterprise in other word, profit mean the excess of total revenue over total cost of production. Usually, profits don't happen they are managed or produce.

In economic theories on profit may be put in three categories the first theory looks upon profit as the reward for bearing risk: the second vies profit as the consequence of friction and imperfection in the competitive adjustment of the economy to dynamic changes. Third sees profit as the

reward for successful innovation (Dean Joel: 1982:6). Profit is yardstick of management's ability to coordinate, plan act in the interest of the consumer. No business sustain if there is regular loss, profit is essential for each enterprise. Thus, it is quite obvious that profit is obtained buy subtracting the cost from the revenues and it is also reward for tacking risks. Profit plays a vital role, not only in managerial decision but also in the general life standard of human beings. Therefore management should continuously evaluate efficiency of its company in terms of profit.

The process of deeply thinking about any things subject matters etc is known as analysis. Analysis is a hard task because it involves the ability to think to periodic, to analyze and to come to decide to control the actions of its present and to cope with a complex dynamic fluid environment. They bridge the gap between where they are and where they want to go (Memoria CB, 1990:36). His statement obviously shows that planning as a complex and hard job and as a tool of developing and getting organizational objectives. Analysis is the process of developing enterprises objective and selecting future course of action to accomplice them it includes (Welsch et al., 1999: 3)

1. Establishing enterprises objectives.
2. Developing premises about the environment in which they are to be accomplished.
3. Selecting a course of action for accomplishing the objects.
4. Initiating activities necessary to translate plans in to action.
5. Current re-planning to correct deficiencies

Analysis is essential to accomplish goals. It reduces uncertainty and provides effective direction to the employed by determining the course of action advance.

Thus, planning establishing the objectives goals strategies, policies and standards of enterprises past is the father of present and to a great extent, present is a guide for future. Therefore, planning for future needs proper guidance to be taken from fast event and acquaintance should be made of present action.

2.2 Concept of Control

Once the planning is determined, it must be carried out under control, controlling shares management activity and for this managers compare actual performance against and find out the deviations talking remedial steps to remove the deviations to make an improvement in the performance because promptness is the essence of an effective control.

Controlling means evaluating the firm's activities against the plan and deciding what should be done if the plan is not being followed (Lynch &Williamson, 1995:18)

Control is the process of ensuring that actual activities confirm to plan activities control helps is correlation. Therefore, planning and controlling are the major function of management.

According to Welsch, controlling involves.

1. Establishing goals and standards.
2. Comparing measured performance against the establish against the established goals and standards.
3. Reinforcing successes and correcting short coming.

Control provides timely information that may prompt the revision of goals. The purpose of control is achieved with setting standards,

comparing, predicted and actual results against other standards and taking corrective actions.

Planning and controlling are interdependent and thus closely related with each other because a manager can not control unless he has planned a course of action for effective and smooth managerial behavior into proper profit and progress on behalf of company firm of enterprises, under this controlling to be applied, both planning and controlling are mutually inseparable.

2.3Meaning and Definition of Profit Planning

Profit planning is one of the most important managerial functions, profit planning is merely a tool of management, which is used to compare and control business operation and inter action.

When a management plans, profit for a specific period of time that is known as profit planning .Every time has to make a plan of profit if it has to survive and grew in the business line or business world in future.

The phrase "Comprehensive profit planning and control" is a new team in the language of business but it is not new concept in the management .Commonly, comprehensive profit planning and control have been identified as a way of managing "means the application of the board concept of profit planning and control all phases of operations on an enterprises and application of a total system approach.

Profit planning is the process of determining the required amount of profit form each principle unit of business. A profit plan is an advance decision of expected achievement based on the most efficient operating

stand of time. It is established against which actual accomplishment is regularly compared.

Profit planning is the estimation and predetermination of revenues and expenses the estimate how much income will be generated and how it should be spend in order to meet investment and profit requirement. In presents a plan for spending income in a manner than doesn't result in a loss (Nine merrier et al1984:133). Explaining the use of profit plans and budget, they further mention that once it is developed, managers know that when actual expenses exceed budget limitation there may be problem. The profit plan tells managers how much money remains to be spent in each expenses category, profit plans are also used to developed new budgets. Profit planning or budgeting is a forward planning and involves the preparation in advance of the quantities as well as financial statements to include the intention of management in respect of the various aspects of the business. Profit planning, in fact is a managerial technique and it is a written plan in which all aspects of business operation with respect of definite future period are included. It is formal statement of policy, plan, objective and goal established by the top management in respect of some future period. Profit planning is a predetermined detailed plan of action developed and distributed as a guide to current operations and as a practical 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 action and in controlling actual performance (Group s.p: 521) Profit planning is a systematic and formal means of decision making and attaining organizational objectives and goals at a specific future period of time by the application of diversified managerial tools for utilization of available resources at a reasonable manner.

Profit planning is managements primary tool to accomplish its objectives because it (Null & Radetsky, p. 36).

1. Provides a disciplined approach to the solution of business problems.
2. Develops throughout the organization and atmosphere of profit mindedness encouraging an attitude of the coast consciousness and maximum asset utilization.
3. Coordinates the operating plans of the diverse segments of the business into a single, comprehensive plan.
4. Encourage a high standard of performance by stimulating competition ,providing a sense of urgency and serving as an incentive to perform more effectively
5. Affords the opportunity to appraise systematically every facet of the business as well as examine and restate periodically its basis policies and guiding principle.
6. Aids and directing capital and effort into the most profitable channels.
7. Provides yardsticks or standards to measure performance and gauge the managerial judgment and ability of the individual executive.

According to Welsch, the three most relevant aspect of profit planning controlling concept are;

1. PPC requires major planning decision by management.
2. PPC entails pervasive management control activities and:
3. PPC recognizes many of the critical behavioral implications throughout the organization.

In the opinion of J. Batty when he was dealing the question of profit planning. It is used to consider (Batty, 1982:322).

1. The volume of output in terms of Numbers of produced or other units.
2. The verity to be produced (The product mix).
3. The cost to be incurred.
4. The prices to be charged.

The aim of the profit planning should be to ensure and adequate return of capital employed and financial stability. Therefore profit planning includes a complete financial and operational plan, for all phases and facts of the business.

A profit plan is a comprehensive statement of intensions, expressed in financial terms, for the operations of the firm or a short period. It is a plan of the firm's expectations and controlling the actual performance of managers and their units (Pandey, 1999:257)

Thus, profit planning is used for development and acceptance of objectives goals and moving an organization effectively to achieve those objectives and goals. Profit planning is developed to meet the objective of effective performance of the management's process.

Profit planning is an integral part of the management by the help of it any enterprises should earn realistic profit return to investment. It is financial and narrative expressions of the expected result from the planning decision. By using profit planning technique, one can achieve the designed goal. Profit planning is flexible and depends upon the size and nature of the firms.

2.4 Use of C.V. P. Analysis in Profit Planning

Planning, controlling and decision making are essential managerial function. Cost volume profit analysis helps the managers to plan for profit, to control cost and make decision. As such it helps (Munakrmi, 2003:123)

1. To estimate profit of losses at various level of output.
2. To help management to five the most profitable combination of cost and volume units.
3. To ascertain the margin of safety.
4. To determine the sales firm will be achieved.
5. To determine the maximum sales volume to avoid losses.
6. To determine most profitable and least profitable product.
7. To determine new break even point to change in fixed or variable cost.
8. To assess the likely effect of management decisions such as an increase or a decrease in selling price adoptions of new method of production to reduce direct labors and increase output.

2.5 Application of C.V.P. Analysis in Profit Planning

Profit planning is the fundamental part of the overall management functions and cost volume profit analysis is major tools of comparative profit ability, therefore, cost volume profit analysis used for following respects (Dango, 2004).

1. It helps in determining the level where all costs can be met.
2. It is helpful in cost control.
3. It helps in fixation of selling price.

4. It also assists the management in understanding the behaviors of cost and help in budgetary control.

5. It assists the management in performance evaluation for the purse of management control.

6. It helps very much in making managerial decision such as make of buy a part l, drop or continue a department or product line, accept or reject a special order, selection of a profitable product mix etc.

2.6 Cost Volume Profit Analysis Tool of Comparative Profitability

Cost volume profit analysis examines the behavior of total revenues, total costs and operating income as changes occur in the output level, the selling prices, the variable cost per unit and or fixed costs of a product (Horn Green et al., 2003).

Cost volume profit analysis is a systematic method of examining the relationship between change in activity (i.e. output) and changes in total sales revenue, express and net profit. As a model of their relationship CVP analysis simplifies the real world condition that a firm will face. Like most models, which are abstractions from reality, CVP analysis is subject to a number of underlying assumptions and limitations. Nevertheless, it is a powerful to for decision making in certain situations (Drury, 2000).

Most of the businesses fail after a few years, sometimes months, of starting because they tend to do anything for volume without thinking how it's going to affect bottom line. Cost-volume-profit analysis is a management accounting tool to show the relationship between the elements of profit planning. Comparative profit ability is the function of the selling price of the product, demand, variable costs, fixed costs, taxes

etc. The whole picture of profit planning is associated with cost-volume-profit interrelationship (Bajracharya et al., 2004:225).

CVP analysis is an important media through which is the management can have an insight into effects on profit on account of variation in cost and sales and take appropriate decision. Profit planning can be done only when the management has the information about the cost of the product and selling price of the product.

The key motive of business enterprises is to make and maximize profit, profit doesn't happen by chance. It is to be managed. CVP is a supplementary tool of planning of profit. It is immensely helpful for developing alternative strategies in sales planning and cost estimation. CVP is an accounting technique showing the relationship between the above mentioned variables. This technique is equally important in profit making and non profit making organization.

Cost-volume-profit analysis is a management accounting too; to show the relationship between the ingredients of profit planning. Profit planning is the function of selling price of the product, the variable cost and volume to be sold. The entire scope of profit planning associated with CPV interrelationship. A widely used technique to study CPV relationship is break even analysis. Bread even analysis concerned with the study of revenue and costs in relation to sales at which the firm's revenue and total costs will be exactly equal (or net income is zero). Thus the BEP may be defined a point at which the firm's total revenues are exactly equal to total costs, yielding zero income, Neither profit nor loss is an break even point or a point at which losses and profit begins (Khan & Jain, 2000).

Cost-volume-profit analysis can be regarded as a sophisticated method or analytical tool used in management. It is extremely useful comparative profitability, management decision, cost control, building etc.

2.7 Concept of Cost Volume Profit Analysis

CPV analysis is an analytical tool for analyzing the relationship among cost, price, profit, sales and production volume. Mainly, there are three elements in CPV analysis. They are cost, sales of production volume and profit. All these terms are interconnected and dependent on one another. For instant, profit per unit of a product depends on its selling prices and cost of sales. The selling price to the greater extent will depend on the cost and costs depend on volume of production. It is highly essential for management to have the complete knowledge about the interrelationship among the cost, volume and profit. A study concerning this interconnection is through cost-volume-profit analysis.

CVP analysis is a supplementary tool of profit planning. It tells many thinks about the relationship between the business variable. Total variables costs are proportionate to the sales volume; where as the total fixed costs remain unchanged within the relevant range of the output levels. That is why net incomes are not in proportion to sales knowing the relationships, one can assess the profit at forecasted sales volume; likewise, required sales can be ascertained for he minimum level of profit. If a company sales can be product, called the product mix, each product many not be equally profitable. So the company's profit will depend up on the ration of each products sale on the total ales revenues. Profit will be greater if high margin items make up a relatively large proportion of total sales consist mostly of low margin items. Changes in sales mix can cause great variations in a company's profit. A shift to low

margin items can cause him total profit to decrease even though total sales increase. On the contrary, a shift in the sales mix form low items to high margin items can cause the reverse effect; total profit may increase even though total sales decrease.

Thus, CVP analysis is the techniques of summarizing the effects of changes in an organization volume of activity on its cost, revenue and profit. Cost volume profit analysis applies marginal or variable costing principles while establishing the effect of the future course of activities on the financial result of the firm. Knowledge of how cost behaves in response to change in volume and how profit bearer in response to change cost and volume helps management to make numerous short terms optimal decisions relating cost control and profit maximization.

2.8 Cost and its Classification

2.8.1 Concepts of Cost

Sacrifice or fore going of resource made for the attainment of specific purpose is known as cost and are measured in monetary terms. Cost is collected, classified, determined, analyzed and controlled keeping in view the very purpose for which it has been incurred. Cost must be paid for production or purchase of goods and services. Usually costs are incurred with a view to obtained more return or resources in future. Immediate effect of cost is that it causes decrease in assets or increase in liabilities.

2.8.2 Classification of Costs

Cost classification is the process of grouping costs according to their characteristic. In other word, it is the placement of like items together by virtue of their common features. Though costs are identified with cost

units, cost centers or cost objectives in general, the same figures can be classified differently Cost classification not only helps management in determining product costs for stock valuation and profit measurement but also helps in decision-making planning and control.

2.8.2.1 Behaviour Wise Classification of Cost

All costs do not show the behaviour through out the operation. There exits a relationship between cost and volume of activity. Cost behaviour implies the relationship between cost and activity. In most of the organization, cost can be classified as variable, fixed and mixed as these behave in relation to activity volume.

Variable cost: These costs tend to very in direct proportion to the volume of output. In other words, when volume of output increases, total variable cost also increase. But the variable cost per unit remains fixed. It includes direct materials, direct wages, power, royalties, normal spoilage, small tools and commission of salesman, etc. It is shown in the figure below:

Figure 2.1: Variable Cost
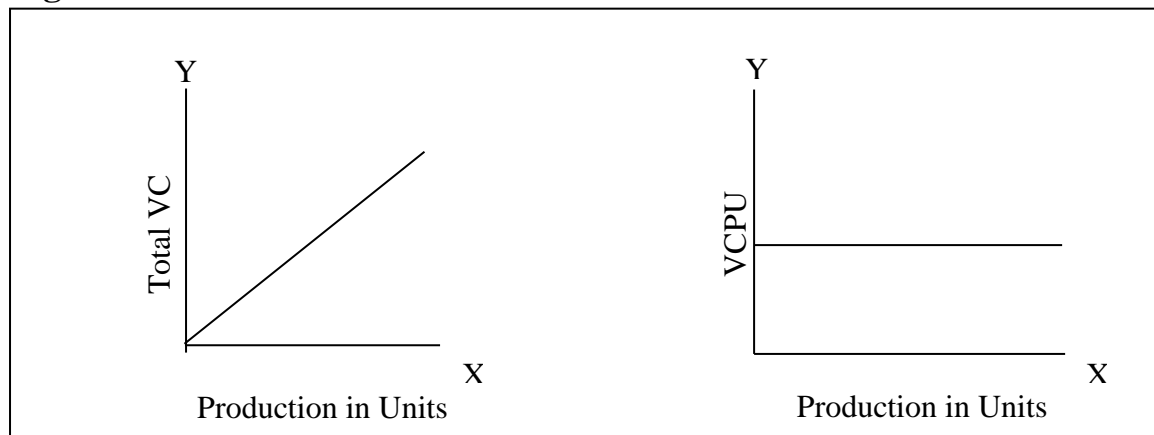
Sources: (Asmitha's Accounting -2, P.-506)

Fixed Cost: These costs remain fixed in "total" amount and do not increase or decrease when the volume of production changes. But the

fixed cost per unit increases when volume of production decreases and vice versa. Fixed cost per unit decrease when the volume of production increases. It includes rent and leaser, municipal, tax, managerial salaries; building insurance, salaries and wages of permanent staff etc. It can be shown in figure below.

Figure 2.2: Fixed Costs
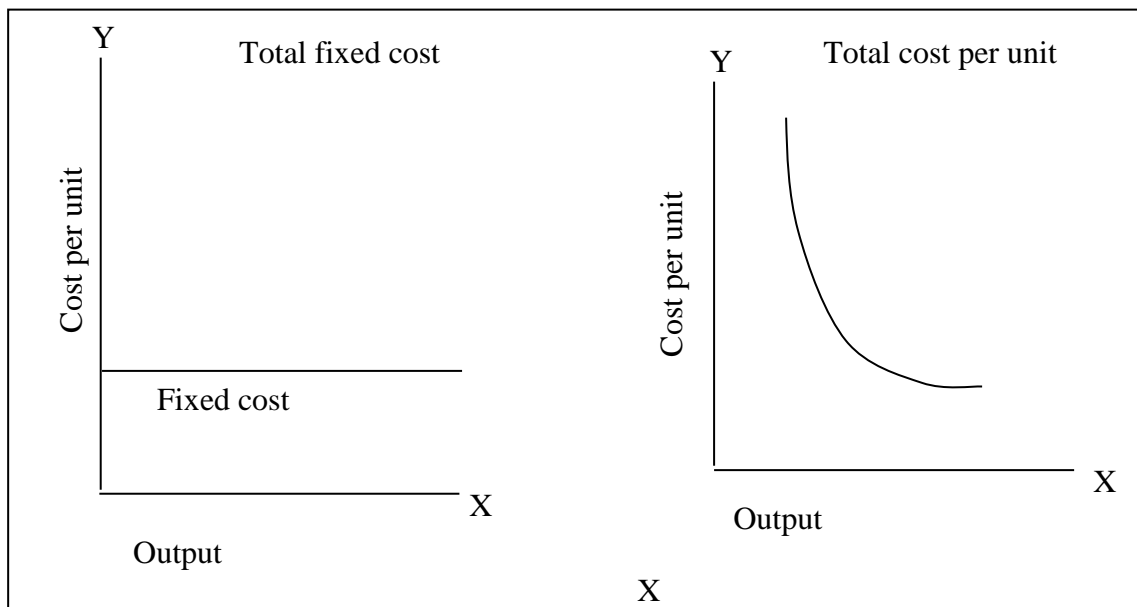
Sources: (Asmitha's Accounting -2, P. 506)

Mixed Cost: These are partly fixed and partly semi variable costs has often a fixed element below which it will not fall at any level of output. The variable elements in semi variable costs changes either at a constant rate or in lumps. For example, interlocution of an additional shift in the factory will require additional supervisor and certain cost will increase in lumps. In the case of telephone, this is a minimum charge and after a specified number of causes, the charges are made according to the number of calls made. Thus, there is not fixed pattern of behaviour of semi variable cost. It includes supervision, light and power, telephone expenses, maintenance and repairs, depreciation, compensation for accidents etc. Semi variable cost can be shown in the figure below.

Figure 2.3: Semi Variable/ Mixed Cost
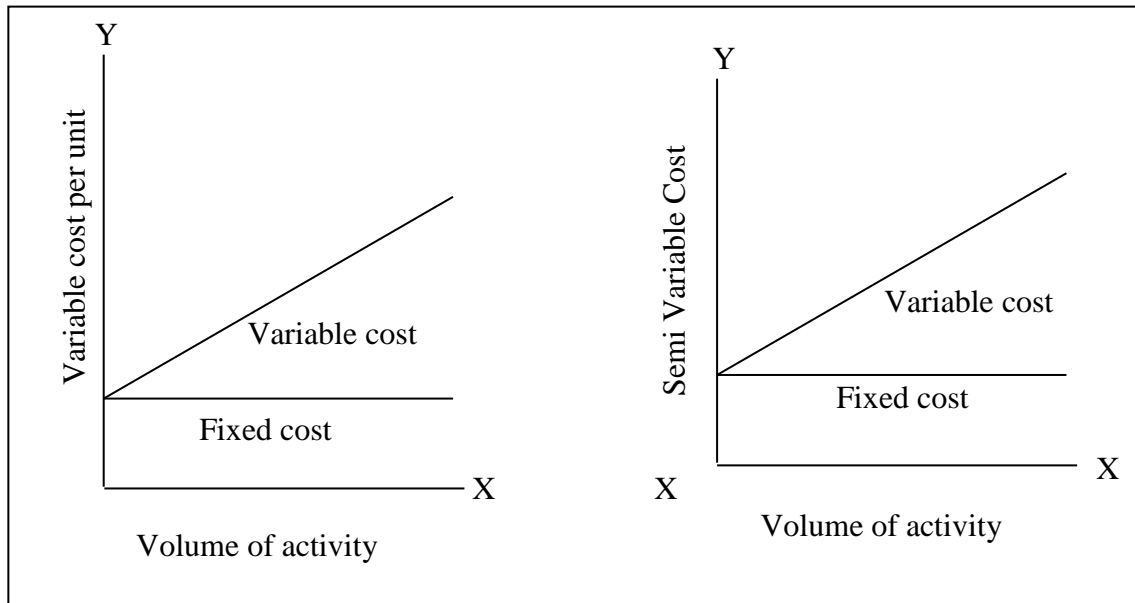
The semi variable cost can be divided into two parts fixed and variable cost. The division of cost to fixed and variable cost is known as segregation of fixed and variable cost is known segregation of cost. There are many method of separating semi variable cost in to fixed and variable cost. The main to methods are as follows;

1.   High-low method
2.   Least square method

a) High-low method: This method assumed that the change in semi variable or semi-fixed cost is caused by variation in output or activity.

The following steps should be following for segregation of semi-variable or mixed cost under high-low method.

Step 1: to elect highest and lowest level of activity.

Step 2: To take the corresponding cost of highest and lowest level of activity.

Step 3: To find out the different between highest and lowest point and ascertains the variable cost per unit by using following formula.

$$\text{Variable Cost per unit (b)} = \frac{\text{High cost} - \text{low cost}}{\text{High units} - \text{low units}}$$

Step 4: To find out the fixed cost by using the following equation.

Fixed cost = Total cost − (Variable cost per unit × activity level)

b) Least square method: Least square methods is statistical method. It is an accurate and trusted method of segregation fixed and variable cost from mixed cost. In this method, first of all, variable cost per unit is calculated. After this, the fixed cost is calculated. The fixed and variable cost can be separated by adopting the stepwise process as shown below.

Step 1: Assume the activity level or production units as 'x' find out the summation of x i.e. Σx.

Step 2: Assume the mixes cost 'y' and first out Σy.

Step 3: Multiply X and Y, and sum the production find out Σxy

Step 4: Convert x in to x2 and find out the sum of x2 i.e. $\Sigma x2$

Step 5: Using the following given below, find out unit variable cost (b).

$$b = \frac{N \Sigma XY - \Sigma X . \Sigma Y}{\left[N \Sigma x^2 - \left(\Sigma x \right)^2 \right]}$$

Step 6: Using the formula given below find out fixed cost (a).

$$a = \frac{\sum Y - b\left(\sum X\right)}{N}$$

Notes:

1. N= Number of observation
2. For finding out the value of 'a' the following formula could be used:

$$b = \frac{N\sum X^2 \sum Y - \sum X . \sum Y}{N\sum x^2 - \left(\sum x\right)^2}$$

2.9   Approaches to Cost Volume Profit Analysis

The CVP relationships can analyzed through different approaches, which are:

1.   Contribution margin approach.
2.   Cost and revenue equation approach.
3.   The graphic (break even chart) approach.

2.9.1 Contribution Margin Approach

The profit of a business enterprise is indicated by contribution margin approach. It high lights the relationship among cost, sales and profit. Contribution margin is the excess of sales price of a unit of output over its variable cost. Contributions margin enables to meet fixed costs and add to the profit. The total fixed costs are covered by it and balance amount is an additional to the net profit. Contribution margin can be represented as:

i.   Contribution Margin = Sales − Variable cost
ii.   Contribution margin = Fixed cost + Profit

Contribution Margin Ratio:

Contribution Margin Ratio also expresses the relationship of Contribution to sales. It is also termed as profit volume ratio, contribution sales or variable profit ratio. If the contribution margin is divided by sales revenue the result is profit volume ration. Symbolically, it is:

P/V ration = Contribution Margin /Sales

Where, C = Contribution Margin and S = sales.

Profit volume ration can be calculated in the following ways too:

i. $\text{P/V Ratio} = \dfrac{\text{Fixed Cost} + \text{Profit}}{\text{Sales}}$

ii. $\text{P/V Ratio} = \dfrac{\text{Fixed Cost} - \text{Profit}}{\text{Sales}}$

iii. $\text{P/V Ratio} = \dfrac{\text{Varablie Cost}}{\text{Sales}}$

iv. $\text{P/V Ratio} = \dfrac{\text{Different in profit of two periods}}{\text{Different in sales two periods}}$

Uses of Profit Volume Ratio

Profit volume ration can be taken as a significance evaluation tool on earning of business enterprises. The earning capacity of enterprises can be measured by the profit volume ratio. The higher profit volume ration reflects the firm's ability for increasing profitability.

The profit volume ration is used to determine the following facts:

i. Determination of Selling Price: Selling price can by determined with the help of profit volume ration. In order to fix the selling price, it is

essential to now about the fixed cost, variable cost and budgeted profit. Bedsides production volume is also required to be fixed the selling price can be determined by using following formation.

$$\text{Selling price per unit} = \frac{\text{Contribution margin}}{\text{P/V ratio} \times \text{sales unit}}$$

$$\text{Selling price per unit} = \frac{\text{Varaiable cost per unit}}{1 - \text{P/V Ratio}}$$

ii. Ascertainment of Profit a Budget Sales Volume: The profit can be determined with the help of margin ratio. For this purposes, the following elements should be determined before hand:

1. Sales amount
2. Variable cost
3. Fixed cost

The following formula used to ascertain the profit:

Profit=sales P/V ratio)-Fixed cost

iii. Ascertainment Profit on Selling Price: Profit volume ratio can be used for finding out the profit on selling price. For this purpose, the following formula is used:

Profit=sales unit after break-even × unit selling price XP/V ratio

iv. Determination of Profit on Cost: Profit can be determined on the basis of variable cost and sales with the help of profit volume ratio. In order to ascertained the profit, the following formula used:

$$\text{Profit} = \frac{\text{Varaiable cost} \times \text{P/VRatio}}{\text{Varaiable cost Ratio}}$$

Where, variable cost ratio=1-P/V ratio

The formula ascertained the profit per unit for the sales after break even sales.

2.9.2 Cost and Revenue Equation Approach

The cost and revenue equation approach is based on the income statement concept. It represents the most convenient and accurate approach to cost volume profit analysis. The various formulations in CVP are derived from the revenue and cost function. The relationship between cost, volume and profit can be expressed algebraically as:

Profit = Total sales-Total cost

Total revenue and total cost are affected by sales volume. The addition of quality in above equation will provide information for knowing the effect of revenue, costs and volume as operating profits. When the quantity is included in the above equation, its algebraic form will be as follows.

Profit= Total revenue -Total variable cost-Fixed cost

Profit= (unit selling price× sales unit)-(Unit variable cost ×sales units)-Fixed cost

Or, P= (S×Q)-(V×Q)-FC
Or, P=Q(S-V)-FC

Where,

P   =   Profits
Q   =   Sales Units
S   =   Units Selling Price
V   =   Unit variable cost
FC   =   Fixed cost

2.9.3 Break Even Analysis

The relation among cost, volume and profit can be found out clearly through break-even analysis. Break-even analysis is regarded as a sophisticated method or tool used in management. It is the most widely known form of cost-volume analysis. So these two terms are used interchangeably.

The break-even point used under break-even analysis. Break-even point is the level of activity where total cost is equal to total cost is equal to total sales. It is a specific level of activity or volumes of sales, which breaks the revenues and costs evenly. It is point of activity or volumes of sales, which breaks the revenues and cost evenly. It is point of neither profit nor loss. If the sale or production is higher than breakeven volume, there will be profit. In the same way if the sales is less than break even sales, there will be a less.

2.9.3.1 Computation of Break Even Point

Break-even point can be determined by following method

a) Algebraic or Formula Method

Break even can be determined by the use of formula. It is also termed as algebraic method. According to the definition of breakeven point, it is such as level of sale or activity, where there is neither profit, nor loss. It is that level of sales, where total cost is equal to total sales revenue. It can be presented in equation from in the following way.

Sales Revenue   =   Fixed Cost+ Variable Cost
For finding out sales Revenue, we have,
Sales Revenue   = Selling price per unit × sales unit

Symbolically,

Sales Revenue   =   S × Q

For finding out, total cost, we have

Total Cost   =   Fixed Cost + (Variable Cost per Unit × Sales Unit)

Symbolically,

Total Cost   =   Variable × Quantity

From the early definition, we have,

Sales revenue=   Total cost

I.e. S× Q = FC + (V × Q)

Or,

(S × Q)- (V×Q)   = FC

Or,

Q(S-V) = FC

Or,

Q   =   FC /(S-V)

Where,

Q   =   Break-even point in units

FC =   Fixed cost

S   =   Selling price cost per unit

V   =   Variable cost per unit

2.10 Application of Break Even Analysis

Break even concept can be used to formulate different policies in a business enterprise. Some of these applications are (Maheshwari, 2000: P.182)

1.   Determination of at different level of sales and margin of safety.

2.   To find the level of output to get the desired profit.

3.   Effect of price reduction on sales volume and changes in sales mix.

4.   Effect of fixed cost or variable cost changes on sales volume.

5.   Selection of most profitable alternative, make or buy decision and drop or add decisions.

2.11 Assumptions of Break Even Analysis

Contribution analysis and break even analysis are based on a specific set of assumptions that should be clearly understood. These underlying assumptions are (Maheshwari, 2000: 182-c 183)

1.   All cost can be classified parts fixed cost and variable cost. These are no cost other than fixed and variable.

2.   There is validity (activity) for using the results of the analysis and sales price doesn't change as units of sales change.

3.   There is only one product or in case of multiple products, the sales mix among the products remain constant.

4.   Basic management policy about operation will not change materially in short run.

5.   The general price level (inflation deflation) will remain essentially stable in the short run.

6.   Sales and production levels are synchronized. That is inventory remains essentially constant or zero.

7.   Efficiency and productivity per person will remain essentially unchanged in the short note.

If any of the above assumptions were changed, revised budget would be needed for a new analysis.

2.12 Limitations of Break Even Analysis

Break-even analysis in many business situations can be used for effective decision-making but there is many shortcoming or limitations is its analysis and interpretations. Some of these can be listed as (Maheshwari, 2000c- 183 184).

1. The assumptions of producer's market phenomenon not hold good for all types of commodities.

2. The fixed costs may not remain constant as well the variable costs may not vary in fixed proportions as different levels of output.

3. With variation of the prices of the items or services, which also depend on the factors affecting it, demand and supply will certainly affect the demand of the commodity. This phenomenon is not covered in Break-even analysis.

4. Identification of fixed and variable costs involved in production process is very complicated. A shift in product mix may change the break-even point.

5. Customers may be given certain discount on purchase to promote sales. This revenue many not be perfectly variable with level of sales output.

2.13 Others Use of Break Even Analysis

Break even analysis can be used in a changed situation in different cases and formula are given below.

1. Required sales volume change on selling prices

$$\text{Revised BEP in Units } = \frac{\text{Fixed Cost}}{\text{Revised Contribution Margin}}$$

$$\text{Revised Break- Even point in Rs.} = \frac{\text{Fixed Cost}}{\text{Revised P/V Ratio}}$$

2.14 Cash Break-Even Point

To find out the volume sales that will equalize the cash out flow during a particular period. Cash break-even point is used. It is a modification of the traditional accrued basis even analysis. The fixed costs are divided in to two groups for out the cash break-even point.

Those are:

1. Fixed costs requiring cash e.g. salary rent, wage, insurance etc.
2. Fixed cost not requiring cash e.g. deprecation, deferred expenditure etc.

The following formula is used for finding out cash breakeven point.

The following formula is used for finding out cash break even.

$$\text{Cash Breakeven point} = \frac{\text{Cash Fixed Cost}}{\text{Unit Contribution Margin PV Ratio}}$$

2.15 Break even sales Volume in the Presence of Step or Moving Fixed Cost

Determination of breakeven sales volume so far was based on the very assumption that the times of fixed costs will remain stable over a board, relevant range of normal operating volume. But it may not be so. Though some items of fixed cost such as deprecation and rent may remain consent but other items such as supervision, repairs and maintenance may change various items between the capacity volume and relevant range of normal

operating volume. Calculation of breakeven volume in the presence of such step or moving fixed cost items requires more homework.

A process of trial and error or resort to specific step helps to overcome such a problem. The points to note here is, we are concerned with the earlier breakeven sales volume as there are numerous break even volumes increasing each time with every increase in step or moving fixed cost (Wagle and Dahal, Management Accounting 4.7).

2.16 Cost-Volume-Profit Analysis for a Multi Product Firm

The relative proportion of sales of product is called the sales mix or the product mix. In the case of a multi-product firm, the contribution for each product can be found out by deduction its variable costs firm sales revenue. The break-even point for each product can be calculated only if the total fixed costs of the firm are distributed and fixed cost for each product is known. The firms over all break-even can be calculated by dividing the total fixed costs by the contribution ratio for the firm. The multi-product firms P/V ratio will not affect the firm's break-even point and profit if each product has the same P/V ratio. However a change in the product mix will change the break-even point and profit when products have unequal P/V rations.

2.16.1 Break Even Point of Multi-Product Company (Firm)

In multi-product firm we have to calculate the BEP in aggregate. The sales mix is used to company a weighted average unit contribution. This is the average of the several product unit contribution margin weighted by the relative sales proportion of each product.

Following procedures are followed to calculate BEP for sales mix or multi-product

1. Calculate contribution margin profit-volume ration for each product.

2. Calculate proportion of sales max in units or values as follows.

$$\text{Sales mix} = \frac{\text{Individual produc's sale units or value}}{\text{Total Product's sales units or value}}$$

3. Calculated weighted average for all products as follows:

a. Weighted average = $\sum$ Sales Mix $\times$ CMPU

b. Weighted average = $\sum$ Sales Mix (value) $\times$ P/V ratio

4. Calculate break-even point (BEP) :

$$\text{Break} - \text{even point} = \frac{\text{Fixed cost}}{\text{Weighted average}}$$

Some Important Formulas

1. Overall BEP (in Units) $= \dfrac{\text{Total Fixed cost}}{\text{Weighted CMPU}}$

2. Overall BEP in Rs. $= \dfrac{\text{Total Fixed cost}}{\text{Weighted CM Ratio}}$

3. Required Sales for desired profit (in Units) $= \dfrac{\text{FC+ Desired Profit}}{\text{Weighted CMPU}}$

4. Required sales for Desire Profit (in Rs.) $= \dfrac{\text{FC+ Desired Profit}}{\text{Weighted CM Ratio}}$

2.17 Margin of Safety

Margin of safety is the excess of the budgeted or actual sales over the break-even sales volume. In other words, it is the difference between the budgeted or actual sales revenue and the break-even sales revenue. It is the position above the break-even points. It is gives management a feel for how close projected operations are to be organizations break-even point. Managers often consider the size of the company's margin of safety when making decisions about various business opportunities. The larger

is the safety margin, the greater is the chance for the company to earn profit (i.e. larger the margin of safety, safer the company). A low margin of safety Company's or firms firm which has a low contribution ratio. When both the margin of safety and the P/V ratio are low, management should think of the possibilities of increasing the selling price, provided it does not adversely affect the sales volume or reducing variables costs by bringing improvement in the manufacturing process, Margin of safety can be ascertained by using the following formula. (Munakarmi, 2003: 127):

Margin of safety in units = (Actual Sales Units - Breakeven Sales Units)

$$\text{or, } \frac{\text{Profit}}{\text{Unit Contribution Margin}}$$

The relationship between safety and actual sales in known as margin of safety ration which is determined as for follows – (Munakarmi, 2003: 127)

$$\text{Margin of Safety Ratio} = \frac{\text{Margin of Safety}}{\text{Actual sales}} \text{ in units}$$

The following steps are needed to rectify to margin of safety.

1. With increasing selling price.
2. With increasing sales volume, if the capacity of fixed cost is not fully utilized.
3. With reducing fixed cost if possible.
4. With reducing variable cost (redacting the cost of raw materials, wages and other direct cost).
5. With substituting product line by more profitable one.

2.17.1 Cost-Volume Profit Analysis and Limiting Factors

CVP analysis is helpful in profit planning and a company will be able to produce any number of output, numbers of output of choice (desires). But in real world it is not possible, because of some critical factors like finishing machine or raw material or labor. These critical factors CVP analysis are known as constraint.

2.17.2 CVP Analysis with a Single Constraint

Scarce resource should be efficiently allocated in order to maximize the contribution margin. A particulars simple and instructive situation arises when there is only one constraining resource. This can occur if the firm's products are all products are all produced with only one material and output is limited by quantity available for that to have alternative uses, the contribution per unit should be calculated for each of these uses. Then, the available capacity for such scare resource should be allocated to the alternative uses on the basis of contribution per resource (Munakarmi, 2003:146)

2.17.3 CVP Analysis with a Multiple Constraints

Where, more than one scare resource exists, the optimum production program cannot easily be establisher the simple process applied in single resource constraint. Under the circumstances simple allocation of recourse constraint or the basis of contribution margin per unit is neither feasible nor desirable. Contributions margin per unit of scarce resource may be different for different scarce resource may be ranking of product, because production processes are affected by many constraints factored rather than single constraint. In such situation, linear programming technique may be uses to optimize product mix. The linear programming

formulation is required to determine a production plan that maximizes contribution from the product mix. Linear programming is a mathematical technique which shows how to arrive at the optimum results, allocation of available with the problem of the allocating limit resource among competitive activities in an optimal manner. It is technique to optimize the allocation of scarce in product mix. It is technique to provide a valuable extension to cost-volume profit analysis. (Munankarmi, 2003:P148).

2.18 CVP and Leverage

Operating leverage is measures of the extent to which fixed costs are being used in organization. The relationship is if a company's variable and fixed cost is reflected in its operating leverage. Generally highly labour intensive organization has high variable cost and this has low operating leverage and a reactively low break even point. Conversely organizations that are highly capital intensive have a cost structure that includes low variable and high break even point. It shows that fixed costs are operating leverage as direct relationship. Higher the amount of fixed cost higher the operating leverage and breaks even point and vice versa. In other words, the firms, with relatively high operating leverage have proportionally high filed expenses; the firm break-even point will be relatively high. The operating leverage factors determined as under (Munankarki, 2003:145).

$$\text{Degree of operating leverage } = \frac{\text{Contribution Margin}}{\text{Net Income}}$$

2.19 Assumptions Underlying CVP Analysis

Break even analysis is the most useful technique of profit planning and control it is a device to explain the relationship between cost volume and profit. The discussing of the CVP analysis (or break even analysis) so far is based on the following assumptions (Pandey 1994:241)

1. **Cost Segregation** – The total cost can be separate to fix a variable components. Constant fixed cost is the total fixed cost that remains unchanged with changes in sales volume. Constant unit variable cost is the variable cost per unit is constant and total variable cost changes in directive proportion to the sales volume.

2. **Constant selling price** - the selling per unit remains the constant; that is it done not change with volume or because of other factors.

3. **Constant sales mix** - the firms manufacture only one product or if there are multiple precut the sales mix does not change.

4. **Synchronized production and sales** - production and sale saner synchronized that is inventories remain the same.

2.20 Limitation of CVP Analysis

Analysis limits the utility and genera applicability of the CVP analysis. Therefore, the analysis should recognized these limitations and adjustment data, whatever possible, to get meaningful results. The CVP analysis suffers from the following limitations (Pandey. 1999; P 214):

1. It is difficult to separate costs in to fixed and variable components

2. It is not correct to assume that total fixed cost would remain unchanged over the entire range of volume.

3. It is difficult to use the break even analysis for a multiple produced firm.

4.	The break even analysis is a short run concept and has a limited use in long range planning.

5.	The break even analysis is a static tool.

2.21 Purpose of CVP Analysis

Cost- volume- profit Analysis helps management in a number of ways. The following purposes are served by it: (Dangol: 160)

1.	Calculation of profit resulting from a budgeted sales volume.

2.	Calculation of sales volume of break-even.

3.	Calculation of sales volume to produce desired profit.

4.	Effect or changes on price, costs and profits.

5.	Determinations of new break-even point for changing in cost and selling price.

6.	Measurement of effect of changes in profit factors.

7.	Choosing the most profitable alternative.

8.	Determining the optimum sales mix.

9.	Determination the optimum sales mix.

10.	Determination of capacity and equipment selection.

11.	Long-term decisions on continuances of products.

12.	Make or but decisions on sub-assemble or part.

13.	To complete the increase or decrease in profit due to change in method of production etc.

2.22 Sensitivity Analysis

Sensitivity analysis is the measurement of elasticity if the change in cost, volume and profit factors or break-even point or give profit. The strategist should focus more on the factor, which is more on the factor, which is more sensitive or responsive for profit. To measure the sensitivity of cost

volume profit factors one can see the impact of certain percentage or amount change in volume. Price or cost factors one on net profit. In other words, sensitivity analysis in the measurement of responsiveness in outcome with the changes in determination variable. We know that the goal of business enterprises is to maximize profit. Is the excess of revenues over the total cost?

Net profit = Total Sales Revenues –Total Cost

= Sales unit x SPPU – Sales unit VCPU – Fixed cost – Taxes

So that, profit = F (Sales volume, selling price, VC, FC, Taxes etc. Means, profit are function, price, VC, FC, taxed and so on.

But one of the factors remain unchanged sometimes the manger can internationally change the price and cost factors as a part of strategic decision. But the strategy should focus more on the favour, which is more sensitive or responsive for profit. Therefore, to measures the sensitivity of cost volume profit factors, we can see the impact of certain percentage or a out change in volume price or cost factors on net profit. (Bajrachary, et al., 2004: 245).

2.23 A Brief Review of Books

"The study of the interrelationship of sales costs and net income is usually called cost-volume profit analysis. CVP analysis examines the response of profit to changes in volume. It realizes on lines on linear cost analysis, the common example from which produces only single products will be used. The analysis will be expanded to cover firms with several products by multiple divisions" (Fisher and Frank, Opcit: 109).

"CVP analysis consists essentially in examining the relationship between changes in volume (output) and changes in profit. The scope of CVP analysis range from the determination of the optimal mix of large multi-product firm. All these decision rely on simple relationship between changes in revenues and costs and changes in output levels (mixes). Output should be expanded or the output mix altered if the incremental revenue resulting from the change exceeds the incremental costs of making the change. Thus, all cost volume and profit analysis is characterized by their emphasis on cost and revenue behavior over various ranges of output levels and mixes". (Dopuch Nicholas et at., 1974: 107).

"Cost Volume and Profit analysis includes the related concepts of a) contribution analysis and b) Break-even analysis. These concepts entered the mainstream management accounting starting in the 1930s with major emphasis flexible or variable expenses budget. Contribution analysis involves a series of analytical techniques to determine and evaluate and effects on profits of changes in sales volume, sales prices. (Fixed expenses and variable expenses) Basically, it applies the concept of contribution margin income statement: Revenues minus variable expenses equals profit. Break even analysis focuses on the break-even sales volume (the point at which profit is zero because revenue equals total cost). The result of break-even analysis is usually graphed to show the relationship between revenue (i.e. sales). Fixed expenses and variable expenses, within relevant range of sales volume" (Welsh, et al., Budgeting Profit Planning and Control 5 the edition: 531).

"C-V-P analysis is concerned with examining the relationship between changes in volume and changes in total revenue and costs in the short term. Drury has compared the economist's and accountant's models of

CVP behavior. The major differences are that the total cost and total revenue functions are curvilinear in the economist's model. Whereas the accountant's model assumes liners relationships. However, we have noted that the accountant's model was intended to predict CVP behavior only within the relevant range, where a firm is likely to be operating on constant returns to sale. A comparison of the two models suggested that, writing the relevant production range, the total costs and revenue functions are fairly similar" (Collin Drury, Management & Cost Accounting 5 the edition, Business Pres).

2.24 Review of the Related Studies

There is little research paper-concerning cost volume profit analysis has been conducted. Most of the researcher is in the profit planning and control. Very few dissertations have been submitted related to cost volume profit analysis. Out of the previous research studies only few research are conducted to analyze the cost volume profit of private enterprise and the study is limited by various constraints. Therefore this study is attempted to review the previous research work on profit planning and control as well as management accounting. As CVP is one of the tools of PPC, the previous studies related to PPC, are reviewed. **Adhikari Mahendra (2009)**

Mr. Mahendra Adhikarihad studied on the topic "cost volume profit analysis to measure the effectiveness of profit planning and control (A case study of Dairy industries in Chitwan district) "The study was based on both primary data aswell assecondary data and analysis was based on only five year data. It was submitted to Turibhuvan University.

The main objective of that research analysis is as follows:

1. To analysis different components of cost as per cost behavior.
2. To analyze the impact of fixed cost on profit.
3. To analyze breakeven point of overall firm as well as individual product.
4. To show the relationship of cost volume and profit between multi products.

Mahendra had pointed out some major finding in this research although most of these finding were out of objectives of the study. Some major finding is as follows.

1. The company's sales have fluctuation but not satisfactory trend of increasing.
2. The company's variable cost is in high proportion than fixed cost in comparison with total cost. This contributes for lower contribution margin.
3. The following suggestions have been recommended on the basis of this research.
4. Dairy Industries in Chitwan District should consider BEP analysis which preparing sales plan production and setting the price of its products.
5. Cost control department separately established which is divided the cost by production and control the cost.
6. All personal should participated on decision making and planning process.

Rijal, Madav (2005)

Mr. Madav Rijal had studied on the topic "cost volume profit analysis to measure the effectiveness of profit planning and control (A case study of Nebico Pvt Ltd)". The study was based on both primary data as well as secondary data and analysis were based on only five years data. It was submitted to Shankar Dev campus, T.U. Kathmandu.

The main objective of that research analysis is a follow.

1. To study relationship of cost volume and profit as an applicable tools of budgeting.
2. To evaluate the stability, financial position and sensitivity of Nebico's activities.
3. To analysis the cost volume and profit of the company and its impact in profit planning and.
4. To provide suggestions and recommendations for improving Nebico's condition etc.

Rijal had pointed out some major finding in this research although most of these findings were out of objectives of the study. Some major findings are as follows:

1. The company's sales have fluctuation but not satisfactory trend of increasing.
2. The company's variable cost is in high proportion than fixed cost in comparison with total cost. This contributes for lower contribution margin.
3. Nebbico had no any plan to reduce cost.
4. The profit trend of the company was not satisfactory.
5. There were not effective sales forecasting techniques.

6.	The company has not utilized its full capacity.

7.	CVP relation is not considered while developing sales plan production plan and pricing strategy.

The following suggestions have been recommended on the basis of this research,

1.	NEBICO should consider BEP analysis while preparing sales plan production and setting the price of its products.

2.	Classification of expenses as variable and fixed or controllable or uncontrollable must be made within a specific framework of responsibility and time.

3.	Cost control department separately established which is divided the cost by production and control the cost.

4.	A systematic approach should be made towards comprehensive profit planning. This cans considerable contribute to the increase in profitability of NEBICO Ltd.

5.	CVP analysis and PPC manuals should be communicated from top to lower levels. As company as unable to generate, profit as per investment make in fixed cost, company should put address on effective utilization of fished cost.

6.	All personal should participated on decision making and planning process.

Chalise,Ishwor, Raj (2001)

The thesis entitled "Profit planning in manufacturing company (a case study of Nepal Lever limited)" is prepared by Mr. Ishwor Raj Chalise. This thesis was submitted to Nepal commerce campus, T.U. Kathmandu.

The primary objective of this research was to highlight the system of profit planning applied and its effectiveness in Nepal. Lever Ltd in coordination to these main objectives are focused to meet the following objectives.

1.   To evaluate the variances between target and actual of Nepal lever Ltd.
2.   To analyze the various functional plans formulated and implemented in Nepal Lever Ltd.
3.   To examine the practice and effectiveness of profit in planning in Nepal lever Ltd.
4.   To evaluate the practice and effectiveness of profit planning applied in Nepal Lever Ltd with conceptual prescriptions.
5.   To point out feasible suggestion and recommendation to make betterment of Nepalese manufacturing enterprise with special reference on Nepal Lever Ltd.
6.   To analyze the various functional budgets adopted in this enterprise.

On the basis of different analysis, observation and informal, discussion, the following major finding have been drawn.

1.   The company has no planning division, it has no skilled and expert and planners as well.
2.   The company has no proper practice of cost segregation.
3.   Yearly budget for income and expenditure prepared by general manager with mutual cooperation of other top level managers and which the board of directors finally approves. The middle and lower level manager and other workers are not participated in preparing the budget.

4. The company has been suffering from many internal and external factors in formulating and implementing plans. However, it has no proper practice of environment scanning.

5. Nepal lever Ltd target is more variable than actual because there is no any proper plan and policy during the operating period of the company.

6. The company has not a practice of preparing long range production plan; The Company prepares annual production plans of each product.

7. The company has not a problem in production labour force and material but suffers from unavailability of market.

Some suggestions have been recommended on the basis of major finding of the study of profit planning in Nepal lever Ltd.

1. Trained and qualified manpower of profit planning should be hired and present manpower should be trained to develop and implement the profit plans effectively.

2. The company should improve productivity of its product by providing sufficient technical staff and technical equipment.

3. For better performance, company should prepare strategic and tactical profit.

4. Nepal lever Ltd should appoint reliable agents and dealers to improve its sales performance.

5. Modern strategic management system should the introduced instantly.

6. Finally, the company should adopt a systematic approach to profit planning.

Dahal, Udya Kumar (2006)

Mr. Dahal has studies on the topics of "Cost volume profit analysis as tools to measure the effectiveness of profit planning with special reference to Dabur Nepal Ltd" This was submitted to Nepal commerce campus T.U. in partial fulfillment of Master Degree in the year 2060.

The main objective of the research was:

1. Examine the variance between target and actual sales and production.
2. To show the capacity utilization of Dabur Nepal Ltd.
3. To forecast future production and sales.
4. To analyze financial performance.
5. To analyze the CVP of company and its impact of profit planning.
6. To provide recommendation and suggestion for improving the profit planning systems of Dabur Nepal Pvt. Ltd.

To conclusion of the research regarding the present the practices of profit planning of Dabur Nepal Pvt. Ltd. has given below.

1. Dabur Nepal Pvt. Ltd constitutes lack of adequate inventory policy.
2. No control over external factor i.e it has poor SWOT analysis.
3. Dabur Nepal Pvt. Ltd does not prepare strategic and policies for long term.
4. Dabur Nepal Pvt. Ltd. is not able to coordinate among various departments.
5. CVP analysis should be considered while formulating profit plan.
6. Profit planning manuals should be communicated from top level to lower level.

7. The company should prepare raw material budget and production budget scientifically.

Mr. Gautam, Yam Prasad (2006)

Mr. Gautam has studies on the topes "An analytical and comparative study on cost volume profit analysis of Unilieve Nepal Ltd and Dabur Nepal private Limited" His research was in partial fulfillment of MBS submitted to the Nepal commerce campus T. U. His objectives of the study were;

1. To calculate of profit resulting from a budgeted sales volume.
2. To calculate break even point C.M analysis margin of safety analysis and profit volume analysis.
3. To calculate sales volume to produce desire profit.
4. To suggest and recommended with the help of major findings.
5. To encourage greater use of CVP approach to manufacturing enterprise in profit planning and control.

Gautam has pointed out various finding and recommendations based on the analysis of data and information.

Some of the major recommendations are as follows.

1. Classification of expenses items as variable and fixed or controllable and non controllable must be made with in specific framework of responsibility and time.
2. Separate cost control department should be established for the effective management of cost.

3. UNL and DNPL should be considered BEP analysis while preparing sales plan production plan and selling price of its products.
4. UNL and DNPL should have proper manpower planning.
5. New market areas should be identifying for the coverage of increased activities of companies.

2.25 Research Gap

There is the gap between the present research and the previous researches. Previous researches were mainly conducted on profit planning control and budgeting practice in the manufacturing companies especially in public enterprise.

The previous research did not disclose with of the profit planning and control tools are in practices in which are not and why. But few of the researches were conducted on simple cost volume profit analysis of public and private limited companies. But to fill gap, it examine the multi product cost volume profit analysis as a tool of comparative profitability, in Chitwan district's dairies by using recent data.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1Introduction

Research is the process of a systematic and in depth study or search of any particular topic, subject or area of investigation backed by the collection, complication, presentation and interpretation of the relevant details or data. It is a careful search of inquiry into any subject matter, which is an endeavour to discover or find out valuable facts, which will be use full for future application or utilization. The research are involves the discovery of new techniques, a modification of old concepts or a knocking of an existing theory concept or technique. It may develop a hypothesis and test it by established relationship between different variable and identify the means for problem solving.

Research methodology is the process of arriving at the solution of the problems through a planned and systematic dealing with the collection analysis and interpretation of the facts and figures. The objectives of this study will be to analyze the CVP relationship in Dairy industries in Chitwan and there by forward some measures to improve the situation.

Research methodology is the way to solve systematically about the research problem. It consists of the research design, research population and sample, sources and types of data, variables and method of analysis and presentation.

3.2 Research Design

The research design is an organization approach and not a collection of loose unrelated parts. It is an integrated system that guides the researcher in formatting implementing and controlling the study. Useful research design can product the answer to the proposed research questions. The research design is thus integrated frame that guides the researcher in planning and executing the research works.

Data and information are the lifeblood or major portion of any study. This study would be attempted to show the relationship among cost, volume, profit and various functional budgets for their achievement and effective application within the conceptual framework of profit planning for solving the problems that had accrued Dairy industries in Chitwan district. A study design is the arrangement of the conditions for collection and analysis of data in that aims to combine relevancy to the study purpose with the economy in producer. These studies will an intensive based on analysis of the past financial performance.

To fulfill the objective of the study primary as well as secondary data be used and study design will descriptive as well as analytical.

3.3 Research Population and Sample

The large group about which the generalization is made is called the population under study or the universe and small portion on which the study is made as called the sample of the study.

Research population would be liquor business of all over Nepal. Due to circumstances it would not be possible to attempt all the number of

research population regarding in this dissertation. The following research will be three Dairy industries in Chitwan district which are below.

1. Shree Jivandhar Dugdh Utpadan
2. Shree Doman Dugdha Utpadan
3. Shree Mukundasen Dugdha Utpadan

The Jivandhara Dugdh Utpadan co operative enterprise ltd. has been established in 2049-1-5 in Ratna Nagar 12 Amiliya, Chitwan. Lila Raj Subedi is chairman of this dairy. He is well qualified specialist in the field of curd, cheese, Khewa and Butter for the last two decade. The Jivandhar Dugdha Utpadan Ltd. is a culinination of a perfectionists dream. It is not only a modern dairy but also a search unit while constructing this dairy, the promoter have given paramount importance to selecting the best quality equipment with the solve aim of producing Ghee, cheese, curd and butter of superfine grade marketing them the bench marker of quality in the market . The dairy has stated its initial operation. It's share capital is 1, 88,000/- and Net saving is 4, 27,334/-

The Shree Doman Dugdha Utpadan Co operative enterprises Ltd. has been established in 2051 in Meghauli -3, Jitpure, Chitwan. Thakur Raj Bista is chairman of this dairy. He is well qualified, specialist in the field of curd, cheese, Khuwa and Butter for the last two decade. It is a culmination of a perfectionists dream. It is not only a modern dairy but also a search until while constructing this dairy the promoter have given paramount importance to select the best quality equipment with the solve aim of producing Ghee, Cheese, curd and butter of superfine grade marketing them the bench marks of quality in the market. The dairy has started its initial operation.

The Mukundasen Dugdha Utpadan co-operative enterprise Ltd. has been established in Meghauli -1, Jitpur, Andhrauli. Khem Narayan is well qualified specialist in the field of curd, cheese, Khowa and Butter for the last two decade. The Mukundasen Dugdha Utpadan ltd is a culimination of a perfectionists dream. It is not only a modern dairy but also a search until. while constructing this dairy the promoter have given paramount importance to select with the solve aim of producing Ghee, cheese curd, and butter of superfine grade marketing them the bench marks of quality in the market. The Dairy has started in initial operation.

3.4 Source and Types of Data

Data may be obtained from several sources, it is not easy to list them in detail. Each research project had its own data needs and data sources. However, the general classification of data sources has the following dimensions.

i)   Secondary Data

Secondary data refer to those for already gathered by other. The sources of secondary data can be divided into two groups, internal and external. The internal secondary data are found within the collected form published document of the company. Mainly data sources depend up on annual reports, publications as well as website of concerned organization. External secondary data are collected from sources outside the company. Such sources may include books, periodicals, publication reports, data services and computer data banks etc.

3.5 Methods of Data Collection

Both primary and secondary data were used in the secondary data were collection from the company's annual reports and other related document , company's website and books published reports etc.

3.6 Methods of Analysis and Presentation

Analysis and presentation of the data is used the core each and every research work. In order to get the concrete results from this research, data are analyzed by using different types of tools. Basically, following two techniques are used to explain the collection data.

3.6.1 Descriptive Technique

Descriptive technique is a fact –finding operation searching for adequate information. It is a type of a study, which is generally conducted to assess the opinions, behaviors or characteristics of given population and to describe the situation and events occurring at present. Descriptive technique is a process of an accumulating fact. It does not necessary seek to explain relationships, test hypothesis, make predictions, or get at meanings and implications of study.

3.6.2   Quantitative Technique

Descriptive techniques would not be enough prepare excellent research report. To fulfill in gap, or make the research report attractive and for better understanding the following profit planning and statistical tools were used:

CVP Analysis Tools

C-V- P analysis was included the following techniques.

1. Contribution Margin (CM) $=$ Sales – Variable Cost

2. Contribution Margin Ratio $= 1 - \dfrac{\text{Variable cost}}{\text{Sales}}$

3. Break even point (BEP) in units $= \dfrac{\text{Total Fixed Cost}}{\text{SPPU - VPCU}}$

4. Break even point (BEP) in Rs. $= \dfrac{\text{Total Fixed Cost}}{\text{CM Ratio}}$

5. Break even point (% of capacity) $= \dfrac{\text{BEP in units /Rs}}{\text{Total Capacity in Units /Rs}}$

11. Safety margin (in Units) $=$ Actual sales units – BEP in unit

12. Safety margin (in Rs) $=$ Actual sales Rs – BEP in Rs

13. Margin of safety Ratio $= \dfrac{\text{Actual /Budget sales BE sales}}{\text{Actual/ Budgeted sales}}$

14. Degree of Operating Leverage $= \dfrac{\text{Contribution Margin}}{\text{Earning Before Interest and Tax}}$

For multi Product Firm

15. Overall BEP (in units) $= \dfrac{\text{Total Fixed Cost}}{\text{Weighted CMPU}}$

16. Overall BEP (in Rs) $= \dfrac{\text{Total Fixed Cost}}{\text{Weighted CM Ratio}}$

17. Required Sales for desired profit (in units) $= \dfrac{\text{FC + Desired Profit}}{\text{Weighted CMPU}}$

18. Required Sales for desire Profit $= \dfrac{\text{FC + Desired Profit}}{\text{Weighted CM Ratio}}$

Profitability Ratio

1. Gross profit margin $\quad = \quad \dfrac{\text{Gross Profit}}{\text{Net Sales}} \times 100$

2. Net profit margin $\quad = \quad \dfrac{\text{Net Profit after tax}}{\text{Sales}}$

Statistical Tools

The relation between two or more variables can be measured by using statistical tools. In the study the following tools are used.

a. Bar Diagram:

Bar diagram are one of the easiest and the most commonly used methods of presenting the numerical data. They present the data by means of bars or rectangles of equal width. The length of bars represents the given figures and the width may be of any size.

b. Mean:

The sum of all observation divided by the number of observation is called mean. In such cases all the items are equally devoted by x. If is defined by the following formula:

$$\text{Mean(X)} = \frac{\sum X}{N}$$

Where, $\sum X$ = the sum of observations

N = No of observation

c. Standard Deviation (SD):

The standard deviation is defined as the positive root of the mean of the squared deviations from their mean of a set of values. It is also known as Root Mean Square Deviation. It is usually devoted by the Greek letter δ (Small sigma).

The SD is calculated by the following formula:

$$\text{Standard Deviation (s.d)} = \sqrt{\frac{\sum X^2}{N} - \left(\frac{\sum X}{N}\right)^2}$$

d. Coefficient of Variation (CV):

The relative measure of dispersion based on SD is called coefficient of SD. Thus

$$\text{Coefficient of SD} = \frac{\delta}{\bar{X}}$$

100 times coefficient of SD is called coefficient of variation. It is denoted by C.V. Thus,

$$\text{Coefficient of variation} = \frac{\delta}{\bar{X}} \times 100$$

e. Time series Analysis (Trend Analysis)

The collection of reading or data regarding to different time is called time series. There are two variables in this case most be time and other variables may be population, production, sales, Profit, etc. A widely and most commonly used method to describe the trend is the method of least square.

The straight line is given by the following:

$y = a + bx$

Where,

Y	=	Values of dependent variables
a	=	Y –intercept
b	=	slope of the trend line
x	=	Year represent

CHAPTER- IV
PRESENTATION AND ANALYSIS OF DATA

Profit Planning is used for development and acceptance of proper objectives and goal for an organization. It is also used to move the organization efficiently to achieve to present objectives and goal. In profit planning cost volume profit analysis can be the most importance devices to utilize the cost with effective and efficient way. CVP analysis has becomes a powerful instrument in managerial decision making specially cost control and profit planning. The CVP analysis is a specially way of promoting and studying the inter relation ship between cost, volume and profit. The basic objective of this study is to examine the presentation practice of CVP analysis and identify the area where CPV analysis could be applied to strong then the "Comparative profitability of Dairy industries of Chitwan District. This chapter presents the analysis and interpretation of data.

4.1 Analysis of Sales Revenue and Percentage Change in Sales Revenue

Jivandhara Dugdha Udhog, Doman Dogdha Udhog and Mukndasen Dugdha Udhog are the multi-product manufacture company productivity and selling different types of product. The attempts beings to present and analysis the previous sales revenue and percentage change in sales revenue. The following table present the sale revenue and percentage change in sales revenue from fiscal year 2064 to 2068.

Table 4.1

Growth Rate of sales Revenue

	Jivan dhara Dugdha Udhog		Doman Dugdha Udhog		Mukundasen Dugdha Udhog	
Year	Sales Revenue	Percentage Change In Sales	Sales Revenue	Percentage In Sales	Sales	Percentage In Sales
2064/65	1,15,87,771	-	3,935,037	-	1,486,864	-
2065/66	1,08,08363	(-6.726%)	4,265,311	8.393%	1,283,723	-13.662%
2066/67	1,14,30645.23	5.76%	6,219,487	45.816%	1,690,306	31.672%
2067/68	1,21,71,137	6.478%	3,767,650	(-39.42%)	2,131,351	26.0926%
Total	45997916		18,187,485		6,592,244	
($\bar{x}$)	11,499,479		4546871.25		1,648,061	
S.D	123236.41		15914.97		44,850.31	
C.V	1.07%		0.35%		2,75%	

Sources: Annual report of dairies (Fiscal year 2064/65 to 2067/68)

From the above table 4.1, it becomes clear that the total sales revenue of Jivandhara Dugdha Udhog, Doman Dugdha Udhog and Mukundsen Dugdha Udhog are fluctuating. The Percentage of sales of different dairies are not same due to the sales revenue of these dairies are not also same. Percentage of sales of Jivan Dhara's is (-6.726 percentage) in F/Y 206465 but Percentage of sales is increasing by 5.76 percentage and 6.47 percentage in 2055/66 and 2067/68. Similarly, Doman Dugdha Udhog and Mukundasen Dugdha's Percentage of sales increase in F/Y 2066/67 but decrease in 2067/68. In this way, we can say that Jivan Dhara will get profit or success but other two dairies condition are not good.

The above table 4.1 clears that different dairies' standard deviation are not same. They are different so coefficient variance will be different. We known that which coefficient variance are very less that is more uniform

and less coefficient has less uniform coefficient variance of Jivan dhara, Doman Dugdha Udhog and Mukunda Sen Dugdha Udhog are 0.34 percentage ,0.35 percentage and 2.72 percentage respectively. We have to choose Doman Dugdha Udhyog because it has very less coefficient variance 0.35 percentage. Which will give us more uniform.

The sales diagram of the different dairies for the study period is shown in below.

Figure 4.1
Sales Bar Diagram
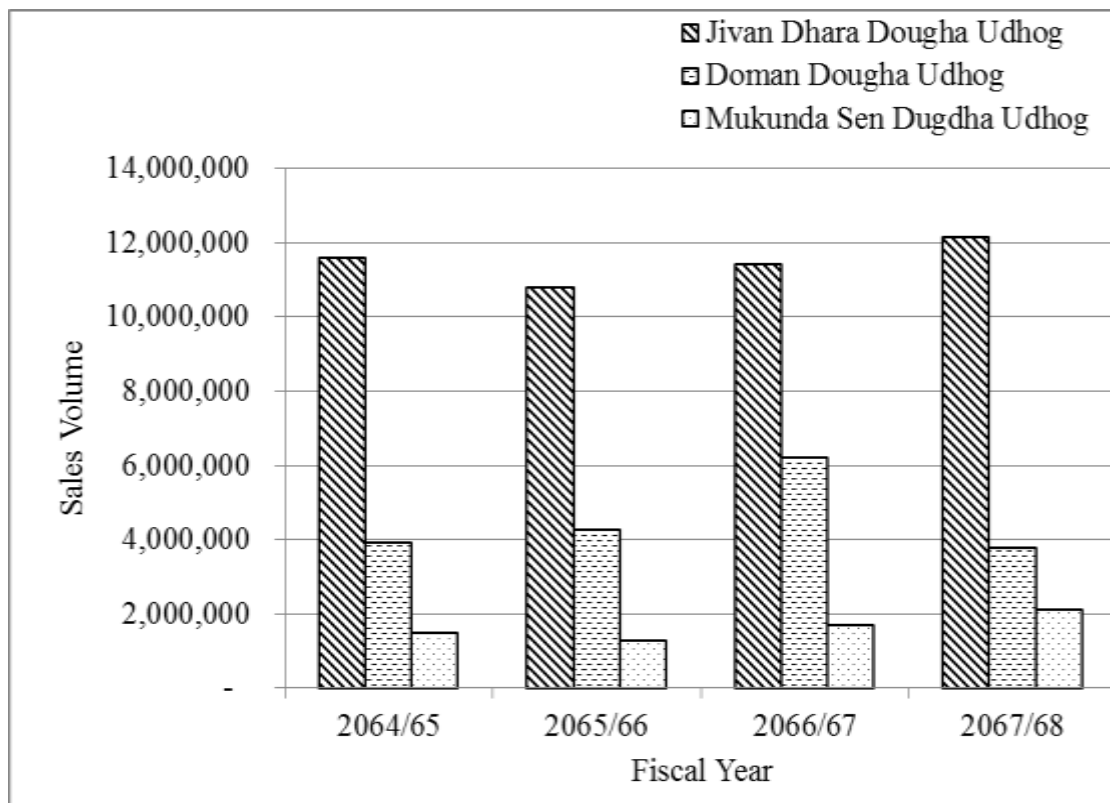
From the above diagram, we know that sales diagram of different dairies are not same. They are different due to indirectly cause the fluctuation of sales. So we have to choose higher sales diagram of dairy because higher sales diagram gives higher profit than other.

4.2 Cost Plan of Dairies

Cost planning and controlling is necessary to maintain reasonable costs level to support objectives and planned programs of the organization. The organization should be not focus itself on decreasing the cost only rather it should be for better utilization of limited resources. It should focus to establish the relationship between expenditures and have benefit derived from those expenditures. The organization can reduce costs temporarily but it may bring many difficulties like break down of machines, inefficiently in works etc. In this study, all fixed and variable cost are goods sold, administrative cost and distribution cost.

The cost is segregated under administrative and distribution categories as per the view of dairies' staffs, (Jivandhara, Mukundasen and Doman Dugdh Udhyog) intuition Judgments and nature of expenses. Like the transportation cost expenses for administrative purpose are categorized under variable administrative cost and the transportation cost expenses for selling and distribution purpose are categorized under variable selling and distribution cost. Hence transportation cost is segregated as 30 percentage variable administrative and 70 percentage selling and distribution cost. In the same way, telephone charges and miscellaneous expenses are categorized as 60 percentage variable administrative and 40 percentage selling and distribution cost. Salary given to administrative staffs is categorized under variable administrative cost and salary given to sales buy is categorized under variable selling and distribution expenses.

4.3 Variable Cost Analysis

Variable costs are based on activities. The variable costs should be zero activity. They change directly with change inactivity level in a

responsibility center. Therefore, if output is doubled, variable expenses are to be doubled if output increase by 15 percent the variable expenses also increase by 15 percent. If output is zero, the variable cost is also zero. But variable cost per unit might be changed due to increase in price of material labor and inventory cost etc.

Table 4.2
Variable Cost Sheet (In Amount)

F/Y	Jivan Dhara		Doman		Mukundasen	
	Variable cost	Change in percentage	Variable cost	Change in percentage	Actual Sales	Change in Percentage
2064/65	1,07,20,320	-	35,72,052	-	13,77,568	-
2065/66	98,64,814	-7.98%	39,83,891	+0.11%	11,47,700	-16.68
2066/67	1,05,49,161	-1.59%	59,49,734	+0.66%	15,88,260	+15.29
2067/68	11,23,54,74	+9.48%	34,53,414	-0.03%	2,11,33,807	+14.34

Source: Annual Report of Dairies (Fiscal year 2064/65 to 2067/68)

The above table 4.3 reveals all variable costs, which are used to product diaries products in terms of costs of sales, administrative, or operating costs and selling and distribution costs. It also depicts the trend of cost. In the above table, F/Y 2064/65 is taken as a base year variable cost of percentage in F/Y 2065/66 and 2066/67 become Negative from it we know that price of variable is going to decrease as well as profit of company is going to increase and decrease. In F/Y 2067/68 percentage of variable cost is positive this means that price of variable positive this means that price of variable cost is increasing and profit of this study is decoding in same ratios.

Percentage of variable cost of Doman Dugdha Udhog is increment in F/Y 2065/66 and decrease percentage of variable cost in F/Y 2067/68 from this we know that percentage of variable cost in increase in F/Y 2065/66,

2066/67 in same ratio profit of this dairy is decreasing and profit is increment in F/Y 2067/68 due to decrease percentage of variable cost.

Again, in F/Y 2065/66, percentage of variable cost is Negative and percentage of variable cost positive in F/Y 2066/67 and F/Y 2067/68 from this we know that profit is increment in 2065/66 and 2066/67 but in 2067/68 profit of Mukundasen is decreasing.

At last we can say that for increasing of profit of any dairies, they have to decrease variable cost otherwise it would be very difficult to achieve profit.

Figure 4.2

Variable Cost Sheet Bar Diagram
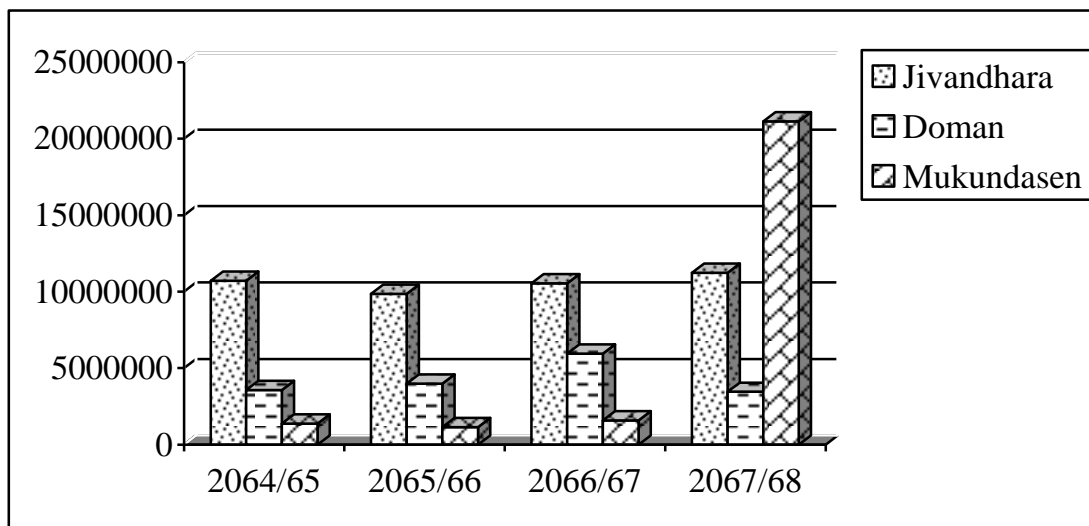
From above diagram, we know that variable costs diagram of different dairies are not same. They are different due to indirectly because the fluctuation of variable costs so we have to choose lower variable cost to achieve profit than other.

At last we can say that for increasing of profit of any dairies, they have to decrease variable cost otherwise it would be vary difficult to achieve profit.

4.4 Contribution Margin

Contribution margin is the difference between the sales revenue and variable cost of production. In other word contribution margin is the fixed cost and profit. High contribution margin shows high profit and vice-versa. Contribution margin of different dairies are presented below.

Table 4.3I

Contribution Margin of Jivandhara Dugdha Udhog

Year	Sales in Rs.	Variable Sales in Rs.	Contribution Sales in Rs.
2064/65	11587771	10720320	867451
2065/66	10808363	9864814	943549
2066/67	11430645	10549161	881484
2067/68	12171137	11235474	935663
Total	45997916	42369769	3628147
($\bar{x}$)			907036.75
S.D			33062.73
C.V			3.645%

Source: Annual Report of Dairies from the F/Y (2064/65 to2067/68)

From the above table 4.4I, we know that contribution margin of Jivandhara Dugdha Udhog is not same. They are different due to sales and variable cost. The highest contribution margin is Rs 943549 in F/Y 2065/66 and lowest contribution margin is Rs 867451 in F/Y 2064/65. $\bar{x}$, S.D and C.V values are given in above table.

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Table 4.3II

Contribution Margin of Doman Dugdha Udhog

Year	Sales	Variable	Contribution
2064/65	3,935,037	3572052	362985
2065/66	4,265,311	3983891	281420
2066/67	6,219,487	5949734	269753
2067/68	3,767,650	3453414	314236
Total	18,187,485	16459091	1728394
($\bar{x}$)			432098.5
S.D			367634.04
C.V			85.08

Source: Annual Report of Dairies from the F/Y (2064/65 to2067/68)

Again in the table 4.4II, the highest contribution margin is Rs 362985 and lowest contribution margin is Rs. 281420. They are not constant due to sales revenue and variable cost but it has to make contribution and its $\bar{x}$, S.D and C.V values are in above table.

Table 4.3III

Contribution Margin of Mukundasen Dugdha Udhog

Year	Sales	Variable	Contribution
2064/65	1,486,864	1377568	109296
2065/66	1,283,723	1147700	136023
2066/67	1,690,306	1588260	102046
2067/68	2,131,351	21133807	179710
Total	6,592,244	132169	527075
($\bar{x}$)			13168.75
S.D			122442.6
C.V			929.792%

Source: Annual Report of Dairies from the F/Y (2064/65 to2067/68)

Similarly, in the above table 4.4III, its contribution margin is not same due to sales and variable cost so it has to try to make constant for achieving profit. The highest contribution margin of Mukundasen Dugdha Udhog is Rs 179710 and lowest contribution margin is Rs 102046.It's $\bar{x}$,S.D and C.V values are given in above table.

From the above table is clear that dairies' standard deviation and Mean are not same. They are different so coefficient variance will be different. We know that which contribution margin coefficient variance are very less that is more uniform and less Contribution margin coefficient has less uniform coefficient variance of Jivandhara Dugdha Udhog, Doman Dugdha Udhog and Mukundasen Dugdha Udhog are 3.645 percentage ,85.08 percentage and 929.7 percentage respectively. So we have to choose Jivandhara Dugdha Udhog because it has very less CM coefficient variance 3.64 percentage that will give us more uniform. If we choose other dairies C.V that will not give us less C.V as Jivandhara Dugdha Udhog than other but The C.M of the different dairies for the study period are shown in a table which is below.

Figure 4.3

Contribution Margin Bar Diagram of Dairies
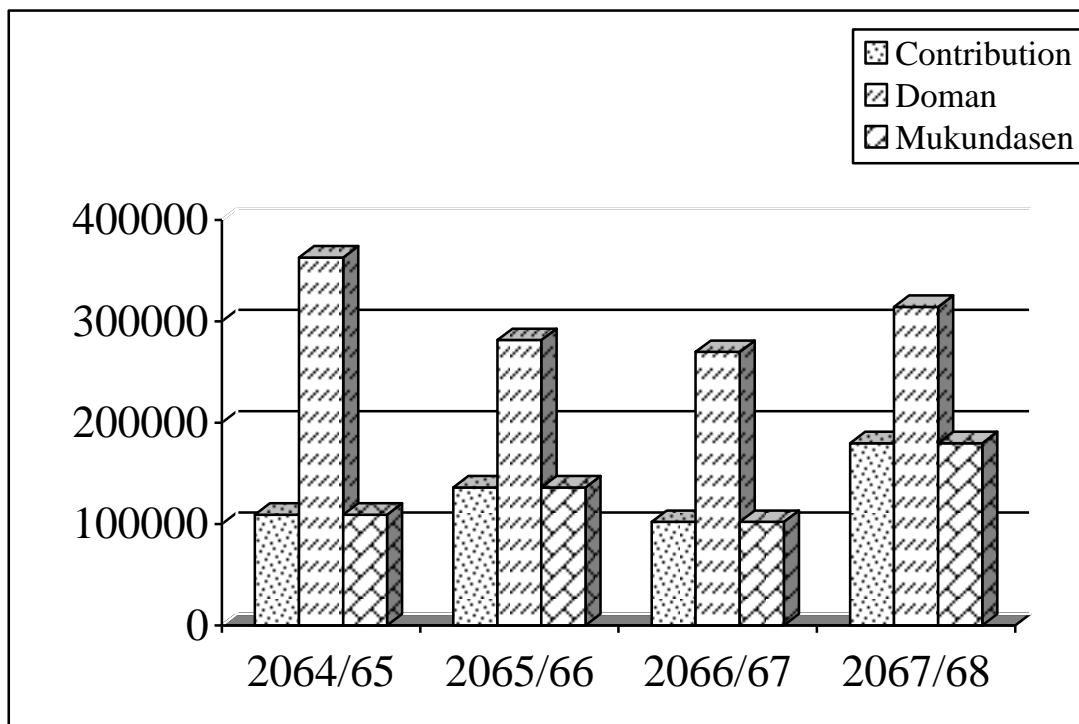
From above diagram, we know that sales volume of different dairies is not same. They are different due to indirectly because the fluctuation of contribution margin so we have to choose higher contribution margin volume of diary because higher contribution margin gives higher profit than other.

4.5 Profit Volume Ratio

Profit volume ratio is the relationship between the contribution margin and sales revenue. The two factors profit and volume are interconnected and dependent with each other. Profit depends upon sale, selling price to a greater extent will depend upon the volume of production. It is calculated by dividing contribution margin by sales. P/V ratio of different dairies is below.

Table 4.4I

P/v ratio of the Jivandhara Dugdha Udhog for the year 2064/65 to 2067/68

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	11587771	10808363	11430645	12171137
96B. C.M	387744	342903	311462	207087
P/V ratio (B/A)	0.0335	0.032	0.027	0.017

Sources: Annual Report of Jivandhara Dugdha Udhog (F/Y 2064/65 to 2067/68)

From the above table 4.4I, P/V ratio of Jivandhara Dugdha Udhog is not same they are different due to contribution margin, highest p/v ratio of Jivandhara Dugdha Udhog is 0.0335 and lowest p/v ratio is 0.017 in 2064/65 and 2067/68.

Table 4.4II

P/v ratio of the Doman Dugdha Udhog (F/Y 2064/65 to67/68)

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	3935037	4265311	6219487	3767650
B. C.M	262025	162470	113298	190236
P/V ratio(B/A)	0.067	0.038	0.018	0.050

Sources: Annual Report ofDoman Dugdha Udhog (F/Y 2064/65 to 2067/68)

Again in table 4.4II, the p/v ratio of Doman Dugdha Udhog is not same, they are different due to contribution margin. Highest p/v ratio is 0.067in F/Y 2064/65 and lowest p/v ratio is 0.018 in F/Y 2066/67.

Table 4.4III

P/v ratio of the Mukunda Sen Dugdha Udhog

for the year 2064/65 to 2067/68

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	1486864	1283723	1690306	21313517
B. C.M	33096	48943	1196	77710
P/V ratio (B/A)	0.022	0.038	0.00071	0.0036

Sources: Annual Report of Mukundasen Dugdha Udhog (F/Y 2064/65 to 2067/68)

Similarly, in table 4.4III, the p/v ratio of Mukundasen Dugdha Udhog also not same, they are different due to contribution margin. Highest p/v ratios 0.038 and lowest p/v ratio is 0.00071 in F/Y 2065/66 to F/Y 2066/67.

From the above table, know that there are not good management because their P/V ratio are fluctuation type so they have to management properly for making constraint P/V ratio or increasing P/V ratio. We know that greater P/V ratio gives more profit but less P/V ratio will give less profit so we always try to achieve more P/V ratio but from the above table. If they unable to solve this problems. They have to close their dairies in future.

4.6 Fixed Cost Analysis

Fixed cost are the cost associated with there inputs which do not very with the change in volume of output activity within a specified large of activity output. Fixed cost thus remain constant whether, activity increase or decrease within a relevant range. For example, the rent of dairy, deprecation etc remain same whether there is an increase or decrease in the volume of activity.

Table 4.5

Fixed Cost Sheet

F/Y	Jivandhara Dugdh Udhog		Doman Dugdh Udhog		Mukundasen Dugdh Udhog	
	Fixed cost (Rs)	Percentage Increase/ Decrease	Fixed cost (Rs)	Percentage Increase/ Decrease	Fixed cost (Rs)	Percentage Increase/ Decrease
2064/65	479707	-	100960	-	76200	
2065/66	600645	25.21%	118950	17.82%	87080	14.29%
2066/67	570022	(18.83%)	156455	54.96%	100850	32.35%
2067/68	728576	51.89%	124000	(22.82%)	102000	(33.86%)

Source: Annual Report of dairies (F/Y 2064/65 to 2067/68)

In the above table 4.5 it is absorbed that the fixed cost of sales of dairies are fluctuate types. They are not constant. Fixed cost of 2064/65 is base year. If fixed cost will increase (Depreciation, staff salary, bonus, office rent etc) profit of dairies will decrease. Jivan Dhara Dugdha Udhog and Mukundsen Dugdha Udhog have to decrease their fixed cost to earn profit because their fixed cost percentage very high in F/Y 2067/68. Mukundasen Dugdha Udhog's fixed cost is going to decrease that is good condition for earning profit. At last for achieving profit, they have to decrease fixed cost.

Figure 4.4

Fixed Cost Sheet Bar Diagram of Dairies
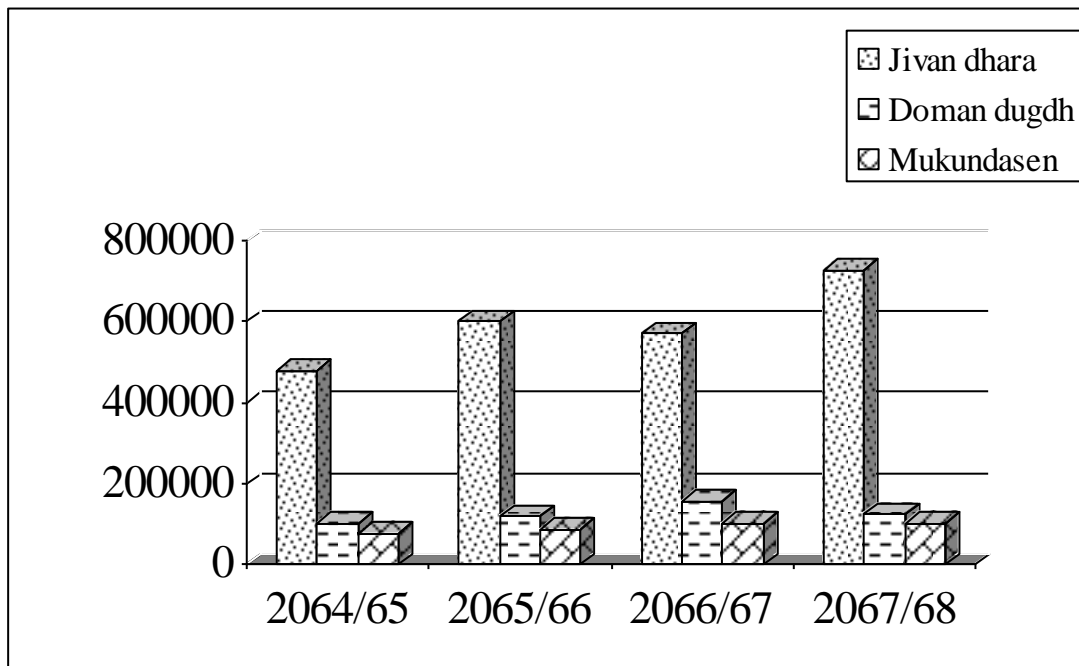
From above diagram, we know that fixed cost bar diagram of different dairies are not same. They are different due to indirectly because the fluctuation of fixed cost so we have to try to make constant fixed cost to achieve profit than other.

4.7 Profitability Ratio Analysis

The word profit ability may define as the ability of given investment to earn a return from its use. Profitability has been considered to a great extent, as the main criteria to judge the extent to which the management has been successful in efficiency utility the funds at its disposals as in other words, how for the management has been successful in maximizing its profit or minimizing its losses, if any.

The word 'profitability' ratio measures the operating efficiency of the dairies. Besides management of the dairies, creditor and owner are also interested in the profitability in relation on investment.

4.8 Gross Profit Margin

Gross profit margin shows the relationship between gross profit and sales of the firm. In reflects the efficiency with which management. A higher ratio indicates good management of the firm and vice versa. It is calculated dividing gross profit by sales.

Table 4.6I

Gross profit Margin of Jivandhara Dugdha Udhog for the year 2064/65 to 2067/68

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	11587771	10808363	11430645	12171137
B. Gross Profit	387744	342903	311462	207087
Gross Profit Margin (A/B)	0.0336	0.032	0.027	0.017

Sources: Annual Report of Jivandhara Dugdha Udhog (F/Y 2064/65 to 2067/68)

From above the table 4.6I, we know that highest Gross profit margin is 0.0336 in F/Y 2064/65 and lowest Gross profit margin is 0.017 in F/Y 2067/68.

Table 4.6II

Gross profit Margin of Doman Dugdha Udhog (F/Y 2064/65 to67/68)

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	3935037	4265311	6219487	3767650
B. Gross Profit	262025	162470	113298	190236
Gross Profit Margin (A/B)	0.067	0.038	0.018	0.050

Sources: Annual Report of Doman Dugdha Udhog (F/Y 2064/65 to 2067/68

Again in the above table 4.6II, we know that Gross profit margin ofDoman Dugdha Udhog is fluctuation types. The highest Gross profit margin is 0.067in F/Y 2064/65 and lowest gross profit margin is 0.018 in F/Y 2066/67.

Table 4.6III

Gross profit Margin of Mukunda Sen Dugdha Udhog

for the year 2064/65 to 2067/68

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	1486864	1283723	1690306	21313517
B. Gross Profit	33096	48943	1196	77710
Gross Profit Margin (A/B)	0.022	0.038	0.0007	0.004

Sources: Annual Report of Mukundasen Dugdha Udhog (F/Y 2064/65 to 2067/68)

Similarly, in the table 4.6III, the highest gross profit margin is 0.038 in F/Y 2065/66 and lowest gross profit margin is 0.004 in F/Y 2067/68.

From the above table, know that there are not good management because their Gross profit ratio are fluctuation type so they have to management properly for making constraint gross profit ratio or increasing gross profit ratio. If they able to increase gross profit margin they can alive in market otherwise they have to close their dairies at any time.

4.9 Net Profit Margin of Dairies

Profit is the major elements of each and every business need for survival, further development and fulfilling social expectation. In modern business, effectiveness and efficiency of any business organization or management are measure from profit. The profit patterns of different dairies are

presented below. The Net profit Margin is analysis on the basis of actual sales achievement.

Table 4.7

Net Profit Margin of Dairies

Year	Jivandhara Dugdha Udhog	Doman Dugdha Udhog	Mukundasen Dugdha Udhog
2064/65	3.34%	6.65%	2.23%
2065/66	3.17%	3.80%	3.81%
2066/67	2.74%	1.82%	0.01%
2067/68	1.70%	5.05%	3.65%

Sources: Annual report of dairies (F/Y 2064/65 to 2067/68) and based on Appendix-XIII to XV

The above table 4.7 shows that the Net profit margin trend is decreasing annually. The decreasing rate of losses are 3.34 percentage,3.17 percentage,2.74 percentage and 1.70 percentage if Jivan Dhar Dugdha Udhog,6.65percentage, 3.80 percentage, 1.82 percentage and 5.05 percentage of Doman Dugdha Udhog and 2.23 percentage,3.81 percentage, 0.01 percentage and 3.65 percentage of Mkundasen Dugdha Udhog in fiscal year 2064/65,2065/66,2066/67 and 2067/68 respectively. It can be expressed to bar diagrams computing the sales trend with profit (Loss) trend which is below.

Figure 4.5

Profit and Loss Distribution
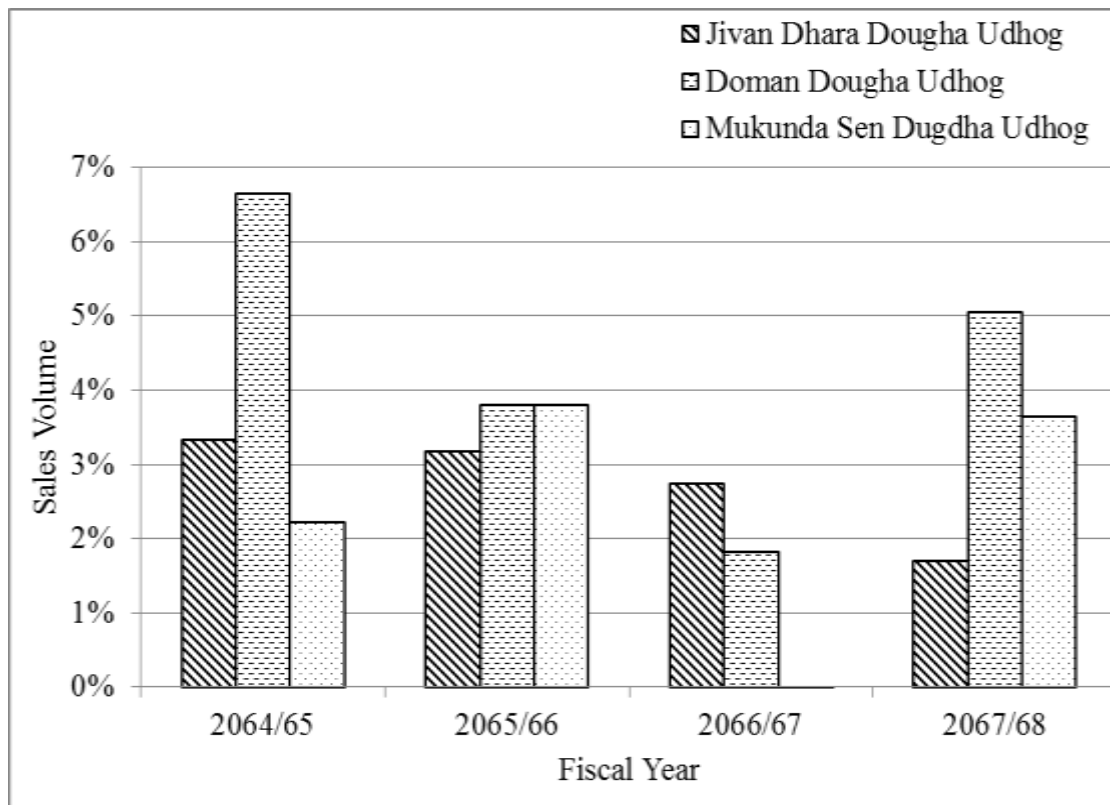
From the above diagram, we know that sales diagram of different dairies are not same. They are different due to indirectly cause the fluctuation of sales. So we have to choose higher sales diagram of dairy because higher sales diagram gives higher profit than other.

4.10 Break Even Analysis

Break even analysis is the most widely known from of the cost volume profit analysis, therefore, cost volume profit analysis is also called break even analysis. The break even point is used under break even analysis. Break even point is the level of activity at which total cost equals to total revenue. In other words break even point is a point of Neither profit nor loss. If the sales or production is higher than the break even profit volume, there will be profit and if the sales or production is less than BEP

sales there will be loss. Beak even point can be determined by dividing Fixed cost by P/V ratio. Different dairies' BEP statements are below.

Table 4.8I

Break Even Point of Jivandhara Dugdha Udhog

Particulars	2064/65	2065/66	2066/67	2067/68
A. Fixed cost	479707	600646	570022	728576
P/V ratio(A/B)	0.0749	0.0872	0.0771	0.077
BEP in Rs(A/B)	6408125	6880406	7393281	9462026

Source: Annual Report of Jivandhara Dugdha Udhog (F/Y 2064/65 to 2067/68)

Table 4.8II

Break Even Point of Doman Dugdha Udhog

Particulars	2064/65	2065/66	2066/67	2067/68
A. Fixed cost	100960	118950	156455	124000
B. P/V ratio	0.92	0.066	0.043	0.083
BEP in Rs(A/B)	1097391	1802273	3613279	1493975

Source: Annual Report of Doman Dugdha Udhog (F/Y 2064/65 to 2067/68)

Table 4.8III

Break Even Point of Mukundasen Dugdha Udhog

Particulars	2064/65	2065/66	2066/67	2067/68
A. Fixed cost	76200	87080	100850	102000
B. P/V ratio	0.074	0.106	0.060	0.008
BEP in Rs(A/B)	1029729	821509	1680833	1275000

Source: Annual Report of Mukundasen Dugdha Udhog (F/Y 2064/65 to 2067/68)

From the above tables (4.8I,4.8II,4.8III), we know that BEP in Rs of both Doman and Mukundasen are fluctuation types but Jivandhara's BEP in Rs is going to increase trend even the study period of four year.

4.11 BEP Ratio analysis

BEP ratio can be calculated by dividing BEP in Rs by sales. Different dairies BEP ratio are calculated below.

Table 4.9I

BEP Ratio of Jivandhara Dugdha Udhog

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	11587771	10808363	11430645	12171137
B.BEP in Rs	6408125	6880406	7393281	9462026
BEP ratio(B/A)	0.55	0.64	0.646	0.77

Source: Annual Report of Jivandhara Dugdha Udhog

(F/Y 2064/65 to 2067/68)

From above table 4.9I,We know that BEP ratio are not constant they are fluctuation types. Minimum BEP ratio of Jivandhara Dugdha Udhog is 0.553 in F/Y 2064/65 and maximum BEP ratio is 0.77 in F/Y 2067/68.

Table 4.9II

BEP Ratio of Doman Dugdha Udhog

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	3935037	4265311	6219481	3767650
B.BEP in Rs	1097391	1802273	3613279	1493975
BEP ratio(B/A)	0.28	0.423	0.58	0.397

Source: Annual Report of Doman Dugdha Udhog (F/Y 2064/65 to 2067/68)

From above table 4.9II, know that BEP ratio of Doman Dugdha Udhog are not constant they are fluctuation type. Maximum BEP ratio Doman Dugdha Udhog is 0.58 in F/Y 2066/67 and minimum BEP is 0.28 in F/Y 2064/65.

Table 4.9III

BEP Ratio of Mukundasen Dugdha Udhog

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	1486864	1283723	1690306	21313517
B.BEP in Rs	1029729	821509	1680838	1275000
BEP ratio(B/A)	0.693	0.639	0.99	0.059

Source: Annual Report of Mukundasen Dugdha Udhog

(F/Y 2064/65 to 2067/68)

Similarly, from above table 4.9III,We know that BEP ratio of Mukundasen Dugdha Udhog is not constant, they are fluctuation types. Maximum BEP ratio of Mukundasen is 0.99 in F/Y 2066/67 and minimum BEP ratio is 0.059 in F/Y 2067/68.

4.12 Analysis of safety margin of Dairies

The margin of safety (MOS) can be defined as the excess of sales over the break even volume of sales. It states the amount by which sales can drop before to be incurred in an organization. Large margin of safety saves the firm. A high margin of safety is particularly significant in times of depression when the demand for the firm's product is falling. A low margin of safety may result for a firm, which has a low contribution ratio.

<div align="center">

Table 4.10I

MOS Jivandhara Dugdha Udhog

</div>

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	10861976	10394115	10901256	11530978
B.BEP in Rs	1392631	10186037	709262	1470807
C. Marginal of Safety (A-B)	9769345	208078	10191994	10060171
D. MOS Ratio (C/A)	0.871	0.0200	0.9349	0.872

Sources: Annual Report of Jivan Dhara Dugdha Udhog (F/Y 2064/65 to 2067/68)

From above table 4.10I, we know that lowest marginal of safety is 0.02 in F/Y 2065/66 and highest marginal of safety is 0.934 in F/Y 2066/67.

<div align="center">

Table 4.10II

MOS of Doma Dugdha Udhog

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Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	3885003	4198778	6209487	3626930
B.BEP in Rs	993815	2280.509	2424916.7	1305229
C. Marginal of Safety (A-B)	2801188	4196497.41	37845703	2320201
D. MOS Ratio (C/A)	0.074	0.99	0.609	0.6398

Sources: Annual Report of Dogdha Dugdha Udhog (F/Y 2064/65 to 2067/68)

Again from above table 4.10II, we know that highest marginal of safety ratio is 0.99 in F/Y 2.65/66 and lowest marginal of safety ratio is 0.609 in F/Y 2066/67 of Doman Dugdha Udhog.

Table 4.10III

MOS of Mukundsen Dugdha Udhog

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	1486864	1283723	1690306	21313517
B.BEP in Rs	76691.3	807770	1672218	6689285
C. Marginal of Safety (A-B)	1410172.7	475953	18088	14624232
D. MOS Ratio (C/A)	0.948	0.370	0.0107	0.686

Sources: Annual Report of Mukundasen Dugdha Udhog (F/Y2064/65 to 2067/68)

Similarly, from above table 4.10III, we know that lowest marginal of safety ratio is 0.0107 in F/Y 2066/67 and highest marginal of safety ratio is 0.948 in F/Y 2064/65.

From the above table 4.10I, We know that MOS ratio is going to increase except F/Y 2065/66 that is very good for Jivan Dhara Dugdha Udhog but is F/Y 2065/66 MOS ratio is very less that means. It will be better to increase selling price and decreasing variable & fixed cost of Jivan dharga. But both Doman Dugdha Udhog and Mukundasen Dugdha Udhog's marginal safety ratio are not constant. They are fluctuation types so they have to increase or make constant for achieving profit or success in business other wise they have to close their dairies at any time.

4.13 Comparison between Actual Sales, Profit and Loss of the Dairies

Dairies are running in profit since the beginning period to 2064/65 but the profit is not very satisfactory and is fluctuating. The main cause it is excess burden, of fixed administrative and manufacturing costs. The following table shows the actual sales and profit/loss trend of the study period.

Table 4.11
Actual Sales and Profit/Loss Trend of Dairies

Fiscal Year	Jivan Dhara Dugdha Udhog		Doman Dugelha Udhog		Mukundason Daugdha Udhog	
	Actual Sales (Rs)	Net Profit & Loss (Rs)	Acutal Sales (Rs)	Profit (Rs)	Actual Sales (Rs)	Profit & loss (Rs)
2064/65	1158771	387744	3935037	262025	1486864	33096
2065/66	140808363	342903	4265311	162470	1283723	48943
2066/67	11430645	311462	6219487	113298	1690306	1196
2067/68	12171137	207087	3767650	190236	21313517	77710

Sources: Annual Report of Dairies (F/Y2064/65 to 2067/68)

The above table 4.11 shows that dairies are earning profit but are not in the satisfactory level from the analysis of this table, it is minimum profit Rs 2,07,087 is earned in the F/Y 2067/68 and maximum profit 3,87,744 is earned in the F/Y 2064/65 profit of Jivandhara Dugdha Udhog seems to decrease trend. If corporation will control the administration cost, other non-manufacturing cost, production and factory expenses. It would earn satisfactory level of profit in coming year.

2066/67 and maximum profit the 2,62,025 is earned in F/Y 2064/65 by Doman Dugdha Udhog and maximum and minimum profit of Mukundasen Dugdh Udhog are 77,710 and 1,196 in F/Y 2067/68 and F/Y 2066/67 respectively. Profit of these dairies have to increase for that corporations have to decrease all cost, like variable cost for earning satisfactory profit for coming year.

4.14 Degree of operating Leverage

A ratio between contribution margin and EBIT is known as operating leverage or a ratio between the percentage change in EBIT and percentage changes in sales amount is known as operating leverage. It measures the degree of business risk associated as a firm. Higher percentage of fixed cost indicates higher degree of operating leverage. It is calculated of fixed cost indicates higher degree of operating leverage. It is calculated by dividing contribution margin by EBIT. The greater degree of operating leverage indicates the greater amount of business risk and vice versa. Degree of operating leverage can calculate by dividing Contribution Margin by Earning Before Interest and Tax.

Table No.4.12

Degree of Operating Leverage of Dairies

F/Y	Jivandhara Dugdha Udhog			Doman Dugdha Udhog			Mukundasen Dugdha Udhog		
	CM (Rs)	EBIT (Rs.)	DOL	CM (Rs)	EBIT (Rs)	DOL	CM (Rs)	EBIT (Rs.)	DOL
2064/2065	867451	387744	2.24	362985	262025	1.39	109396	33096	3.30
2065/66	943549	342903	2.75	281420	162470	1.73	136023	48943	2.78
2066/67	881484	311462	2.83	269753	113696	2.38	102046	(1196)	-85.3
2067/68	935663	207087	4.52	314236		1.65	179710	77710	2.31
Total			12.34			7.15			-76.91
Mean($\bar{x}$)			3.085			1.7575			-19.22

Sources: Annual Report of Dairies (F/Y2064/65 to 2067/68)

The above table 4.12 shows that operating leverage of Jivndhara Dugdha Udhog is 2.24, 2.75, 2.83 and 4.52 in F/Y 2064/2065 to F/Y2067/2068. The mean of DOL is 3.085.If a sales increase by 10 percentage the amount of operating profit (EBIT) increase by 3.087 percentage.

Similarly, operating leverage of Doman and Mukundasen Dugdha Udhog are 1.39, 1.73, 2.38, 1.65 and 3.30, 2.78,-85.3, 2.31 in F/Y 2064/65, 2065/66, 2066/67, 2067/68 respectively. The mean of DOL is 1.78 and -19.22. If sales increase by 1 percentage the amount of operating profit (EBIT) of Doman increases by 1.7875.

4.15 Relation between BEP in Rs and Cash BEP

Different between BEP in Rs and Cash BEP can calculated after reducing Cash BEP from BEP in Rs. Relation between BEP and Cash BEP of different dairies are below.

Table 4.13I

BEP Ratio of Jivandhara Dugdha Udhog

Particulars	2064/65	2065/66	2066/67	2067/68
A.BEP in Rs	6408125	6880406	7393281	9462026
B.Cash BEP	1392631	1018603	709262	1470807
Difference (A-B)	501494	5861803	6684019	7991219

Source: Annual Report of Jivandhara Dugdha Udhog (F/Y 2064/65 to 2067/68)

From above table 4.13I, We know that different between BEP in Rs and Cash BEP is going to increase in every year that is good. They should try to reduce cash BEP in each year for achieving maximum benefits.

Table 4.13II

BEP Ratio of Doman Dugdha Udhog

Particulars	2064/65	2065/66	2066/67	2067/68
A.BEP in Rs	1097391	1802273	3613279	1493975
B.Cash BEP	993815	1280509	2424916	1305229
Difference (A-B)	103576	521764	1188363	188746

Source: Annual Report of Doman Dugdha Udhog

(F/Y 2064/65 to 2067/68)

Again from above table 4.13II,We know that difference between BEP in Rs and Cash BEP are going to increase in each year that is good symptom for achieving profit.

Table 4.13III

BEP Ratio of Mukundasen Dugdha Udhog

Particulars	2064/65	2065/66	2066/67	2067/68
A.BEP in Rs	1029729	821509	1680833	12750000
B.Cash BEP	76691	807770	1672218	66892857
Difference (A-B)	953037	13739	8620	6060714

Source: Annual Report of Mukundasen Dugdha Udhog

(F/Y 2064/65 to 2067/68)

Similarly, from above table 4.13III if Mukundasen Dugdha Udhog value of difference BEP in Rs and Cash BEP are not constant they are fluctuation types.

At last we can say that difference between BEP is Rs and Cash BEP are constant or decrease that is good for dairy because they will earn profit. If their difference will increase, they will get loss.

4.16 Major Finding

The analyses of various data collected by primary and secondary sources and on the basis of observation and discussion the following major finding have been drawn:

1. Sales plan of dairies are not properly maintained

2. Sales of trend of dairies are in fluctuation condition, therefore, there is not fixed to earn profit or loss.

3. Expenses are in fluctuation condition.

4. These dairies have not details and systematic expenses plan. The fixed, variable and mixed expenses plan is the necessary elements for the profit planning and control.

5. The cost of dairies classified into fixed and variable cost. There is no practice of identifying semi variable and there segregation into variable and fixed by using scientific technique.

6. The fixed cost of the dairies is increasing annually. Advertisement, salary and allowance, communication, expenses, insurance premium, depreciation and interest on long term are higher portion of total fixed cost and the amounts of there items are highly incremental condition.

7. The variable cost are also in fluctuates and vital items are milk with direct expenses on purchased, sales promotion, expenses, royalty, transportation and insurance expenses, salary and wages leakage and breakage, complementary expenses, traveling expenses and water and electricity.

8. The C.M in about 20 percentages which is much to cover up its fixed cost. The actual sales of milk are more than BEP of all dairies. The C.M ratio of selected products are also less than and nearly 20 percentage.

9. Selected product lines are utilizing their specific fixed cost. Since lower fixed cost and variable cost of dairies are profitability.

10. For profit achievement, the dairies should be adjusted fixed cost, variable sales and profit by ratio analysis.

CHAPTER FIVE
SUMMARY, CONCLUSION AND
RECOMMENDATIONS

5.1 Summary

Comparative profitability analysis is greater helpful in managerial decision-making, especially cost control and profit planning. It provides attention-decision, making and problem solving backgrounds for important planning decision, such as selecting distribution channel, Pricing, special promotion and personnel hiring. "Know your cost" is an essential them for any managers. Comparative profit analysis helps to direct managerial attention to important problems and paves.

The study is completely related with the Comparative profit analysis of the Dairies' tool. These Dairies aim to be the leading Dairies and food processing industry in country. These have been successfully introducing varieties of dairy products harmonizing with the changing taste of coming generation. It is firmly committed to high quality production of world class standard at most reasonable price and giving consumer's services of high satisfaction, although, these Dairies have failed to achieve budgeted sales during the study period. The Dairies' financial (profit/loss) position is not satisfactory and BEP position is also not satisfactory. So, the Dairies will not achieve in a remarkable sales and profit.

5.2 Conclusion

With the break even calculation, Comparative profit analysis helps for answered some additional questions. What sales volume is necessary to earn a desired net income? What net income will be earned if unit selling price are reduced in order to increase sales Volume? What net income

will be earned through reducing the unit labour cost and installation cost of new machine? What net income will be earned if the sales mix will be changed? So the Comparative profit analysis keeps a big value in the land of Profit Planning Controlling.

For the achievement of the above advantage, corporations have not applied Cost Volume Profit tools on profit planning and control. Profit planning has been found unsystematic and traditional way. There is no plan and policies like production plan, sales plan and other operating plan. The Company has not utilized its full capacity because of the lack of raw material, inefficiency of management and lack of skilled production specialist.

These Dairies have not used BEP tools for planning. So the Dairies is not able to earn large. There is not perfect sales policy or sales planner; as a result these Dairies are not able to meet the largest sales. The top level management makes the decision and policies. Target sales are always greater than actual sales. The major problems faced by the Dairies are increase in the variable operating cost because they have adopted neither the cost control system nor the systematic and scientific plan for classification of cost.

5.3 Recommendations

To solve the problem regarding the Comparative Profit Analysis the following points are recommended. Dairies must improve its profitability through the improvement of its short term performance for which some suggestions have been stated as follows.

a.   It is suggested to the Dairies for practicing the Comparative profit analysis as a tool of PPC for improving business performance

through acquiring the valuable information about cost, revenue and profit.

b. Cost plan in Dairies have not been maintained systematically. Dairies must establish a cost control program for maintaining a remarkable discipline on cost control by controlling wastages of raw materials.

c. The variable cost has been found very large in these Dairies which increase in BEP amount. So, the company should reduce the variable cost by searching the economic resources of material and using the advance technology in production.

d. The profit margin of these Dairies are very low, where as the operating ratio is too high. The management should follow regular supervision, inspection, evaluation and monitoring.

e. Dairies should follow the new business strategies for exploring the economic, effective and efficient resources and improving the quality of working life of its employees.

f. Dairies should develop a culture for reviewing its activities to control worthless task and developing the valuable strategies.

g. These Dairies have not depended proper segregation method of cost into variables and fixed cost. It is very importance for applying analysis. So, it is recommended to follow the segregation method either high low point or least square method for finding correct variable cost and fixed cost.

BIBLIOGRAPHY

A. Books:

Agrawal, G. R. (2004). *Dynamic of Business Environment in Nepal. Kathmandu: MK Publishers* and Distributors.

Anthony, R.N. & Welsch, G. A. (1997). *Fundamentals of Management Accounting.* Illinois Rechard D. Irwin Homewood.

Bajracharya, B. C. (2057). *Business Statistics and Mathematic.* Kathmandu: M.K. Publishers and Distributors.

Batty, J. (1982). *Management Accounting.* Plymouth: The English Language Book Society and Macdonald and Evans Limited.

Bradely, J. F. (1964). *Administrative Financial Management.* USA: Holt, Rinchard and Wiston Inc.

Chaudhari, A. K. & Sharma, P. K. (2003). *Statistical Methods.* Kathmandu: Khanal Books & Stationery.

Dahal, R. K. & Wagle, K. N. (2004). *Management Accounting.* Kathmandu: Khanal Books & Stationery.

Dangol, R. M. (2058). *Management Accounting*. Kathmandu: Taleju Prakashan.

Dangol, R. M. (2058). *Management and Cost Accounting*. Kathmandu: Taleju Prakashan.

Drury, C. (2000). *Management and Cost Accounting.* Business Press: Thomson Learning.

Gupta, S. C. (1997). *Advanced Accounts.* New Delhi: S. C hand and Company.

Gupta, S. P. (1995). *Management Accounting.* Agra: Shahitya Bhawan Publication.

Horngreen, C. T., George, P. & Dater, S. M. (1999). *Cost Accounting: a Managerial Approach.* New Delhi: Prentice Hall of India Private Limited.

Khan, M. Y. & Jain, P. K. (1993). *Management Accounting.* New Delhi: Tata McGraw Hill Publishing Company Ltd.

Kothari, C. R. (1990). *Research Methodology: Methods and Techniques.* New Delhi: Willey Eastern Limited.

Lynch, R. M. & Williamson, R. W. (1999). *Accounting for Management.* New Delhi: Willey Eastern Limited.

Maheshwary, S. N. (2000). *Management Accounting and Financial Control.* New Delhi: Sultan Chand and Sons Educational Publishers.

Munakarmi, S. P. (2003). *Management Accounting.* Kathmandu: Buddha Academic Enterprises Pvt. Ltd.

Ninemeire, J. D. & Schmidgall, R. (1984). *Basic Accounting Standard.* Air Publishing Company.

Pandey, I. M. (1994). *Management Accounting.* New Delhi: Vikas Publishing. House Pvt. Ltd.

Pant, P. R. (2004). *Business Environment-in Nepal.* Kathmandu: Buddha Academic Publisher & Distributor Pvt. Ltd.

Shrestha, B. P. (1981). *An Introduction to Nepalese Economy.* Kathmandu: Raina Pustak Bhandar.

Welsch, G. A. Hilton, R. W. & Gordon, P. N. (1992). *Budgeting Profit Planning and Controlling* New Delhi: Prentice Hall of India Pvt. Ltd.

Weston, J. F. & Copeland, J. F. (1992). *Managerial Finance.* Chicago: The Dryden Press. ·

Wolff, H. K. & Pant P.R. (2007). S*ocial Science Research and Thesis Writing.* Kathmandu: Buddha Academic Enterprises Pvt. Ltd.

B. Unpublished Thesis:

Adhaikari, M. (2009). *Cost Volume Profit Analysis as a Tool to Measure the Effectiveness of Profit* (A case study of Himalayan Distillery Ltd. Pvt.)

Chalise, I. R. (2001). *Profit Planning in Manufacturing Company: A case Study of Nepal Lever Limited.* Unpublished Master's Thesis, Nepal Commerce Campus. T.U. Kathmandu.

Dahal, K. K. (2006). *Cost Volume Profit Analysis as a Tool to Measure the Effectiveness of Profit Planning with Special Reference to Dabur Nepal Pvt. Ltd.* Unpublished Master's Thesis, Shankar Dev Campus, T.U. Kathmandu.

Dhakal, K.H. (1999). *Development of Dairy Farming: a Case Study of Gitanagar VDC*. An unpublished dissertation, central department of Geography, TU Kathmandu.

Gautam, Y. P. (2006). *An Analytical and Comparative Study on CVP Analysis of Unilever Nepal Limited and Dabur Nepal Pvt. Ltd.* Unpublished Master's Thesis, Nepal Commerce Campus, T.U.

Joshi, D. D. & K. C., T. B. (2001). *An Overview on Small Holder Dairy Production and Marketing in Nepal to Make Milk not Methane Gas in Nepal*. Kathmandu.

Poudel, B. (2012). *Cost Volume Profit Analysis of Kathmandu Dairy P. Ltd.* Unpublished Masters Thesis Submitted to TU, Kathmandu.

Pradhan, S. L. (2000). *Livestock Development in Nepal.* Figure Challenges, Development Concept and Approaches, Environmentally sustainable livestock production for poverty alleviation, proceedings of the Third National Animal Science Convention, Kathmandu: NARC.

Rijal, M. (2005). *Cost Volume Profit Analysis to. Measure the (Effectiveness of Profit Planning and Control: A Case Study of Nebico Pvt. Ltd.* Unpublished   Master's Thesis, Nepal Commerce Campus, T.U.

Upadhaya, R. M., Joshi, D. D., & Thapa, T.B. (2001). *History of Dairy Development in Nepal.* Lalitpur: National Dairy Development Board, Danida Support Project.

C. Website

www.amul.com

www.dairydev.com.np

D. Journal Articles and Annual Reports

Doman Dugdha Udhog Co-operative Ltd. Meghauli -3 Jitpure (Chitwan)

Jivna Dhara Dugdha Udhog Co operative Ltd. R.Na.Pa. -12, Amiliya, Nabinchowk, Chitwan

Mukundasen Dugdha Udhog Co-operative Ltd. Meghauli -1 Jitpure (Chitwan)

APPENDIX-I

Calculation of Trend line Variable Cost of Jivandhara Dugdha Udhog

Rs. in Lakh (00000)

Year	V.C (Y)	X=2(x-2065/66.5)	XY	X
2064/65	107.2032	-3	-321.6096	9
2065/66	98.64814	-1	-98.64814	1
2066/67	105.49161	1	105.49161	1
2067/68	1123.35474	3	3370.06422	9
Total	ΣY=1434.6976	ΣX=0	ΣXY=3055.298	ΣX^2=20

Calculation of a and b,
We know that y=a+bx…….eqn (i)
y =total variable cost
X= Deviation taken time
Since x=0
a =$\Sigma y/n$=   358.6744225
b=$\Sigma xy/\Sigma x^2$ =152.7649
Putting the value of a and b in eqn (i)
 y =358.6744+152.7649X
Estimating the variable cost of 2068/69 to 2069/70
For 2068/69,
X=2068/69-2065/66.5=2.5
Y=358.6744+152.7649×2.5
=740.5866

Again for 2069/70
x=2069/70-2065/66.5=3.5
y=358.6744+152.7649×3.5
=893.35

APPENDIX-II

Calculation of Trend line Variable Cost of Doman Dugdha Udhog

Rs. in Lakh (00000)

Year	V.C(Y)	X=2(x-2065/66.5)	XY	X
2064/65	13.77568	-3	-41.32704	9
2065/66	11.477	-1	-11.477	1
2066/67	15.8826	1	15.8826	1
2067/68	2113.3807	3	634.01421	9
Total	$\Sigma Y=252.47335$	$\Sigma X=0$	$\Sigma XY=597.0927$	$\Sigma X^2=20$

Calculation of a and b,
We know that y= a+bx…….eqn (i)
Y=total variable cost
X= Deviation taken time
Since x=0
$a = \Sigma y/n =$ 63.1183375
$b = \Sigma xy/\Sigma x^2 = 29.8546385$
Putting the value of a and b in eqn (i)
 y =63.118337+29.8546385X
Estimating the variable cost of 2068/69 to 2069/70
For 2068/69,
X=2068/69-2065/66.5=2.5
Y=63.1183375+29. 8546385×2.5
=13775493.38

Again for 2069/70
x=2069/70-2065/66.5=3.5
y=63.1183375+29. 8546385×3.5
=16760960

APPENDIX-III
Calculation of Trend line Variable Cost of Mukundasen Dugdha Udhog

Rs. in Lakh (00000)

Year	V.C (Y)	X=2(x-2065/66.5)	XY	X
2064/65	13.77568	-3	-41.32704	9
2065/66	11.477	-1	-11.477	1
2066/67	15.8826	1	15.8826	1
2067/68	211.33807	3	634.01423	9
Total	ΣY=252.47335	ΣX=0	ΣXY=597.0927	ΣX^2=20

Calculation of a and b,

We know that y=a+bx.......eqn (i)

y =total variable cost

X= Deviation taken time

Since x=0

a =Σy/n=   63.11883375

b=$\Sigma xy/\Sigma x^2$ =29.8546385

Putting the value of a and b in eqn (i)

 y =63.118337+29.8546385X

Estimating the variable cost of 2068/69 to 2069/70

For 2068/69,

X=2068/69-2065/66.5=2.5

Y=63.118337+29.8546385×2.5

=13775493.8

Again for 2069/70

x=2069/70-2065/66.5=3.5

y=63.118337+29.8546385×3.5

=16760960

APPENDIX-IV

Calculation of Trend line BEP of Jivandhara Dugdha Udhog

Rs. in Lakh (00000)

Year	BEP (Y)	X=2(x-2065/66.5)	XY	X
2064/65	64.08125	-3	-192.24375	9
2065/66	68.80406	-1	-68.80406	1
2066/67	73.93281	1	73.93281	1
2067/68	94.62026	3	283.86078	9
Total	ΣY=301.43838	ΣX=0	ΣXY=96.74578	ΣX^2=20

Calculation of a and b,

We know that y=a+bx……. eqn (i)

y =total variable cost

X= Deviation taken time

Since x=0

$a = \Sigma y/n$=   75.359595

$b = \Sigma xy/\Sigma x^2$ =4.837289

Putting the value of a and b in eqn (i)

 y =75.359595+4.837289X

Estimating the variable cost of 2068/69 to 2069/70

For 2068/69,

X=2068/69-2065/66.5=2.5

Y=75.359595+4.837289×2.5

 = 8745281.75

 Again for 2069/70

x=2069/70-2065/66.5=3.5

y=75.359595+4.837289×

=9229010.65

Calculation of Trend line BEP of Doman Dugdha Udhog

Rs. in Lakh (00000)

Year	BEP (Y)	X=2(x-2065/66.5)	XY	X
2064/65	10.29729	-3	-30.8919	9
2065/66	8.21509	-1	-.21509	1
2066/67	16.80833	1	16.80833	1
2067/68	12.75	3	382.5	9
Total	ΣY=48.070	ΣX=0	ΣXY=360.2014	ΣX²=20

Calculation of a and b,
We know that y=a+bx……. eqn (i)
y =total variable cost
X= Deviation taken time
Since x=0
a =Σy/n=   12.0175
b=Σxy/Σx² =18.0100685
Putting the value of a and b in eqn (i)
 y =12.0175+18.0100685X
Estimating the variable cost of 2068/69 to 2069/70
For 2068/69,
X=2068/69-2065/66.5=2.5
Y=12.0175+18.0100685×2.5
=57.0426
Again for 2069/70
x=2069/70-2065/66.5=3.5
y=12.0175+18.0100685×3.5
=75.0527

Calculation of Trend line BEP of Mukundasen Dugdha Udhog

Rs. in Lakh (00000)

Year	BEP (Y)	X=2(x-2065/66.5)	XY	X
2064/65	10.29729	-3	-30.8910	9
2065/66	8.21509	-1	-8.21509	1
2066/67	16.80833	1	16.80833	1
2067/68	127.5	3	382.5	9
Total	$\Sigma Y=162.82071$	$\Sigma X=0$	$\Sigma XY=360.2014$	$\Sigma X^2=20$

Calculation of a and b,
We know that y=a+bx……. eqn (i)
y =total variable cost
X= Deviation taken time
Since x=0
a $=\Sigma y/n=$ 40.7051775
b$=\Sigma xy/\Sigma x^2$ =18.0100685
Putting the value of a and b in eqn (i)
 y =40.7051775+18.0100685X
Estimating the variable cost of 2068/69 to 2069/70
For 2068/69,
X=2068/69-2065/66.5=2.5
Y=40.7051775+18.0100685×2.5
=8573034.875
Again for 2069/70
x=2069/70-2065/66.5=3.5
y=40.7051775+18.0100685×3.5
=10374040

Calculation of Trend line Fixed Cost of Jivandhara Dugdha Udhog

Rs. in Lakh (00000)

Year	Fixed Cost (Y)	X=2(x-2065/66.5)	XY	X
2064/65	4.79707	-3	-14.3912	9
2065/66	6.00646	-1	-6.00646	1
2066/67	5.70022	1	5.70022	1
2067/68	7.28576	3	21.85728	9
Total	$\Sigma Y=23.78951$	$\Sigma X=0$	$\Sigma XY=7.15983$	$\Sigma X^2=20$

Calculation of a and b,

We know that y=a+bx……. eqn (i)

y =total variable cost

X= Deviation taken time

Since x=0

a =Σy/n=   5.9473775

b=Σxy/Σx^2 = 0.3579915

Putting the value of a and b in eqn (i)

 y =5.9473775+0.3579915X

Estimating the variable cost of 2068/69 to 2069/70

For 2068/69,

X=2068/69-2065/66.5=2.5

Y= 5.9473775+0.3579915$\times$2.5

=684235.625

Again for 2069/70

x=2069/70-2065/66.5=3.5

y= 5.9473775+0.3579915$\times$3.5

=720034.8

APPENDIX-VIII

Calculation of Trend line Fixed Cost of Doman Dugdha Udhog

Rs. in Lakh (00000)

Year	FixedCost (Y)	X=2(x-2065/66.5)	XY	X
2064/65	1.0096	-3	-3.0288	9
2065/66	1.1895	-1	-1.1895	1
2066/67	1.56455	1	1.55455	1
2067/68	1.24	3	6.72	9
Total	ΣY=6.00365	ΣX=0	ΣXY=1.06625	ΣX²=20

Calculation of a and b,
We know that y=a+bx……. eqn (i)
y =total variable cost
X= Deviation taken time
Since x=0
a =Σy/n=   1.2509125
b=Σxy/Σx² = 0.0533125
Putting the value of a and b in eqn (i)
 y =1.2509125+0.0533125x
Estimating the variable cost of 2068/69 to 2069/70
For 2068/69,
X=2068/69-2065/66.5=2.5
Y=1.2509125+0.0533125×2.5
=138419.375
Again for 2069/70
x=2069/70-2065/66.5=3.5
y= 1.2509125+0.0533125×3.5
=143750.5

APPENDIX-IX

Calculation of Trend line Fixed Cost of Mukundasen Dugdha Udhog

Rs. in Lakh (00000)

Year	Fixed (Y)	X=2(x-2065/66.5)	XY	X
2064/65	0.762	-3	-2.286	9
2065/66	0.8708	-1	-0.8708	1
2066/67	1.0085	1	1.0085	1
2067/68	1.02	3	3.06	9
Total	ΣY=3.6613	ΣX=0	ΣXY=0.9117	ΣX²=20

Calculation of a and b,

We know that y=a+bx……. eqn (i)

y =total variable cost

X= Deviation taken time

Since x=0

a =Σy/n=　　0.915325

b=Σxy/Σx² = 0.045585

Putting the value of a and b in eqn (i)

y =0.915325+0.045585x

Estimating the variable cost of 2068/69 to 2069/70

For 2068/69,

X=2068/69-2065/66.5=2.5

Y= 0.915325+0.045585×2.5

=102928.75

Again for 2069/70

x=2069/70-2065/66.5=3.5

y= 0.915325+0.045585×3.5

=107487.3

APPENDIX-X

Calculation of Trend line BEP Cash of Jivandhara Dugdha Udhog

Rs. in Lakh (00000)

Year	BEP (Y)	X=2(x-2065/66.5)	XY	X
2064/65	13.92631	-3	-41.7789	9
2065/66	101.86037	-1	-101.86	1
2066/67	7.09262	1	7.09262	1
2067/68	14.70807	3	44.12421	9
Total	$\Sigma Y=137.58737$	$\Sigma X=0$	$\Sigma XY=-92.4225$	$\Sigma X^2=20$

Calculation of a and b,

We know that $y=a+bx$……. eqn (i)

y =total variable cost

X= Deviation taken time

Since x=0

$a =\Sigma y/n=$ 34.3968425

$b=\Sigma xy/\Sigma x^2 = -4.6211235$

Putting the value of a and b in eqn (i)

 $y =34.3968425-4.6211235x$

Estimating the variable cost of 2068/69 to 2069/70

For 2068/69,

X=2068/69-2065/66.5=2.5

Y= 34.3968425-4.6211235×2.5

=22.84403.37

Again for 2069/70

x=2069/70-2065/66.5=3.5

y= 34.3968425-4.6211235×3.5

=18222.91

APPENDIX-XI

Calculation of Trend line BEP Cash of Doman Dugdha Udhog

Rs. in Lakh (00000)

Year	BEP (Y)	X=2(x-2065/66.5)	XY	X
2064/65	9.93815	-3	-29.81445	9
2065/66	22.80509	-1	-22.80509	1
2066/67	24.24916	1	24.24916	1
2067/68	13.05229	3	39.15687	9
Total	ΣY=70.04469	ΣX=0	ΣXY=10.78649	ΣX^2=20

Calculation of a and b,

We know that y=a+bx……. eqn (i)

y =total variable cost

X= Deviation taken time

Since x=0

a =$\Sigma y/n$=17.5111725

b=$\Sigma xy/\Sigma x^2$ = 0.5393245

Putting the value of a and b in eqn (i)

 y =17.511725+0.5393245x

Estimating the variable cost of 2068/69 to 2069/70

For 2068/69,

X=2068/69-2065/66.5=2.5

Y= 17.511725+0.5393245×2.5

=18.85948375

Again for 2069/70

x=2069/70-2065/66.5=3.5

y= 17.511725+0.5393245×3.5

 =19.39881

APPENDIX-XII

Calculation of Trend line BEP Cash of Mukundasen Dugdha Udhog

Rs. in Lakh (00000)

Year	BEP (Y)	X=2(x-2065/66.5)	XY	X
2064/65	7.66913	-3	-23.00739	9
2065/66	8.0777	-1	-8.0777	1
2066/67	16.72218	1	16.72218	1
2067/68	668.92857	3	2006.7851	9
Total	ΣY=701.39758	ΣX=0	ΣXY=1992.422	ΣX^2=20

Calculation of a and b,

We know that y=a+bx……. eqn (i)

y =total variable cost

X= Deviation taken time

Since x=0

a =$\Sigma y/n$=   175.349395

b=$\Sigma xy/\Sigma x^2$ = 99.62114

Putting the value of a and b in eqn (i)

 y =175.349395+99.62114x

Estimating the variable cost of 2068/69 to 2069/70

For 2068/69,

X=2068/69-2065/66.5=2.5

Y=175.349395+99.62114×2.5

=42440224.5

Again for 2069/70

x=2069/70-2065/66.5=3.5

y= 175.349395+99.62114×3.5

=2284403.37

APPENDIX-XIII

Calculation of Trend line Net Profit of Jivnadhara Dugdha Udhog

Year	Net Profit(Y)	X=2(x-2065/66.5)	XY	X
2064/65	387744	-3	-1163232	9
2065/66	342903	-1	-342903	1
2066/67	311462	1	311462	1
2067/68	207087	3	621261	9
Total	ΣY=1249126	ΣX=0	ΣXY=-573412	ΣX²=20

Calculation of a and b,
We know that y=a+bx……. eqn (i)
y =total variable cost
X= Deviation taken time
Since x=0
a =Σy/n=   312299
b=Σxy/Σx² = -28670.6
Putting the value of a and b in eqn (i)
 y =312299-28670.6x
Estimating the variable cost of 2068/69 to 2069/70
For 2068/69,
X=2068/69-2065/66.5=2.5
Y= 312299-28670.6×× 5.9473775+0.3579915×2.5
=240622.5
Again for 2069/70
x=2069/70-2065/66.5=3.5
y= 312299-28670.6×3.5
=211951.9

APPENDIX-XIV

Calculation of Trend line Net Profit of Doman Dugdha Udhog

Rs. in Lakh (00000)

Year	Net Profit (Y)	X=2(x-2065/66.5)	XY	X
2064/65	262025	-3	-786075	9
2065/66	162470	-1	-162470	1
2066/67	113298	1	113298	1
2067/68	190236	3	570708	9
Total	$\Sigma Y=728029$	$\Sigma X=0$	$\Sigma XY=-264539$	$\Sigma X^2=20$

Calculation of a and b,

We know that y=a+bx……. eqn (i)

y =total variable cost

X= Deviation taken time

Since x=0

a =$\Sigma y/n$=   182007.25

b=$\Sigma xy/\Sigma x^2$ =-13226.95

Putting the value of a and b in eqn (i)

 y =182007.25-13226.95x

Estimating the variable cost of 2068/69 to 2069/70

For 2068/69,

X=2068/69-2065/66.5=2.5

Y=182007.25-13226.95×2.5

=148939.875

Again for 2069/70

x=2069/70-2065/66.5=3.5

y=182007.25-13226.95×3.5

=135712.925

APPENDIX-XV

Calculation of Trend line Net Profit of Mukundasen Dugdha Udhog

Rs. in Lakh (00000)

Year	Net Profit (Y)	X=2(x-2065/66.5)	XY	X
2064/65	33096	-3	-99288	9
2065/66	48943	-1	-48943	1
2066/67	1196	1	1196	1
2067/68	77710	3	233130	9
Total	$\Sigma Y=160945$	$\Sigma X=0$	$\Sigma XY=86095$	$\Sigma X^2=20$

Calculation of a and b,

We know that y=a+bx……. eqn (i)

y =total variable cost

X= Deviation taken time

Since x=0

a =Σy/n=   40236.25

b=Σxy/Σx^2 = 4304.75

Putting the value of a and b in eqn (i)

 y =40236.25+4304.75x

Estimating the variable cost of 2068/69 to 2069/70

For 2068/69,

X=2068/69-2065/66.5=2.5

Y=40236.25+4304.75×2.5

=50998.125

Again for 2069/70

x=2069/70-2065/66.5=3.5

y=40236.25+4304.75×3.5

=55302.875

APPENDIX-XVI

Income Statement ofJivandhara Dugdha Udhog for the year 2064/65 to 2067/68

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	11587771	10808363	11430645	12171137
B. Variable Cost	10720320	9864814	10549161	112354741
C. Contribution Magine (A-B)	867451	943549	881484	935663
D. Fixed Cost (Total)	479707	600646	570022	728576
E. Profit less (C-D)	387744	342903	311462	207087
F. P/V Ratio = CM/Sales	0.0749	0.0872	0.0771	0.077
G. BEP in Rs = (FC/P/V Ratio)	6408125	6880406	7393281	9462026
(A-G)				

Sources: Annual Report of Jivan Dhara Dugdha Udhog (F/Y 2064/65 to

Income Statement of Doman Dugdha Udhogfor the year 2064/65 to 2067/68

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	3935037	4265311	6219487	3767650
B. Variable Cost	3572052	3983891	5949734	3453414
C. Contribution Magine (A-B)	362985	281420	269753	314236
D. Fixed Cost (Total)	100960	118950	156455	124000
E. Profit less (C-D)	262025	162470	113298	190236
F. P/V Ratio = CM/Sales	0.092	0.066	0.0433	0.083
G. BEP in Rs = (FC/P/V Ratio)	1097391	1802273	3613279	1493975

Sources: Annual Report of Dogdha Dugdha Udhog (F/Y 2064/65 to 2067/68)

Table4.8 III

Income Statement of Mukundasen Dugdha Udhogfor the year

2064/65 to 2067/68

Particulars	2064/65	2065/66	2066/67	2067/68
A. Sales	1486864	1283723	1690306	21313517
B. Variable Cost	1377568	1147700	1588260	21133807
C. Contribution Magine (A-B)	109296	136023	102046	179710
D. Fixed Cost (Total)	76200	87080	100850	102000
E. Profit less (C-D)	33096	48943	1196	77710
F. P/V Ratio = CM/Sales	0.074	0.106	0.060	0.008
G. BEP in Rs = (FC/P/V Ratio)	1029729	821509	1680833	12750000

Sources: Annual Report of Mukundasen Dugdha Udhog (F/Y 2064/65 to

2067/68)