

CHAPTER-1

INTRODUCTION

1.1 Background of the Study

The key motive of the business organization is to make and maximize profit. Profit does not happen by chance .It is to be managed .Cost-volume-Profit analysis is a most important tool of profit planning means of predicting the effects of changes in cost and sales level on the Income of business .In this simplest form, it involves the determination of sales level at which accompany neither earns profit nor incurs a loss, or in the other word the point at which it breaks even. Break-even point is only a special case of CVP analysis included to find out sales volume to earn zero profit or desire profit, to affect income by changes in selling price, to check income if new machine will be installed, to examine operating profit if fixed cost as well as unit variable cost will be changes etc.

CVP analysis is an analytical tool for studying the relationship between volume, cost and profit. There are three factors of CVP analysis which are interconnected and dependent on one another CVP analysis examines the behaviors of total revenues, total cost and operating incomes as changes occurs in the output level, the selling price, the variable cost per unit and fixed cost of a product. CVP also helps to make or buy decision on sub-assembly or part.

Cost volume profit analysis is a management accounting tool to show the relationship between the ingredients of profit planning. Profit planning is function of selling price of the product, the variables costs and volumes to be sold. The scope of profit planning associated with CVP relationship is break-even analysis. Break even analysis is concerned with the study of revenues and costs in relation to sales at which the firm's revenue and total cost will be exactly equal (or net incomes is zero). Thus the break even point (BEP) may be defined a point at which the firm's total revenue are exactly equal to

total costs, yielding zero income. The “no profit no loss” is a break-even point or a point at which losses ceases and profit begins.

CVP analysis is an important media through which the management can have insight into effects on profit on account of variance in cost and sales and take appropriate decisions. 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 enterprise is to make and maximize profit. Profit does not happen by chance. It is to be managed. CVP is supplementary tool of planning of profit. It is immensely helpful for developing cost estimation. CVP is an accounting technique showing the relationship between the abovementioned variables. This technique is equally important in profit making and non-profit making organization (Bajracharya, 2004:98),

Hence, a company may use CVP analysis, as a planning tool when the sales volume is known and management need to find out how out how much profit will result. Another way of planning is to begin with a target profit. Then through the CVP analysis a company can decide the level of sales needs to reach that profit. Similarly, for the cost control purpose, CVP analysis is a way to measure how well different departments in the company are doing. At the end of a period, the company analyzes sales volume and related actual cost to find out the actual profit. It measures performance by comparing actual cost with expected cost. These expected costs are computed by applying CVP analysis to the actual sales volume. The result is a performance report on which management can base the control of operations.

1.2 Introduction of Sujita Paint Industry Pvt. Ltd.

Sujita paint industry is a domestic and dry colour production industry. It was established in 4th Asoj 2061B.S. Nearer to Kumari rice Mil Tintoliya, Biratnager. But due to the small place and lack of security, it is transferred to Hatkhola Biratnager.

The proprietor of this industry is Miss Rinku Kumari Mishra. But it's all activities are operated by Mr.Nabin Mishra. Who is her father. He is founder of it. The industry is the result of his hard working. He has established it on the basis of knowledge and experience gained from working in the similar field about 11years.

It has been using white cement and stone powder as base materials and other different types of chemical just like O₂, Dalda and so on.

It buys all Raw materials and chemicals according to chemist's advice. It was tested in lab before using it.

And also all finished goods are tested in lab before launching marked. That's why this industry can compete with it's competitors like Pashupati & Salimar which are known as superior paint industries of Nepal for this reason it has succeeded to cover nearly all markets of Nepal except some remotes areas like Mustang, Manag, Jomsom etc.

It sells it's all products 5% less than its competitor's price. Even though it's products are of high quality because it is small industry and it has brought only two or three items in market but also it has succeeded to satisfy it's most of the customers. It satisfies it's customers practically using own and it's compititor's colours. But it never compromises in its price.

It has succeeded to make its workers happy. There are nearly 8 employees working in it regularly. Among them there are four men and four women. It gives job to uneducated youth in marketing department after giving marketing training that's too good.

It provides wages to its employees. Even through the work is stopped due to electricity. It provides bananas and raw sugar to eat to its employees regularly to save them from diseases due to dust and also without mask and sipper, it doesn't permit or allow their employees to work.

Due to this reason its customers are also satisfied. Due to its qualitative product and beneficial i.e. increasing. But due to lack of capital and uncertainty of electricity it can't supply its product according to demand.

Its capital is only 50, 00,000. So it has produced only 2/3 items. It wants to launch 2/3 items more incoming days but due to lack of capital and electricity it's still stopped. Its trade name is sujita paints and its brand name is J.K, CEM. Uphar CEM, sagun CEM, etc. Its packaging are in the form of plastic bucket packet and suck. In start in period it sold 20 to 25 kg jar in average rate of Rs 500 but today in Rs 700. In my thinking government of Nepal should help this type of Industry because these industries are the base of development.

1.2.1 Goal of Sujita Paint Industry

The following goals of Sujita paint are as:

- ✓ Sujita paint aims to be the leading paint & colour processing industry in Nepal.
- ✓ We have successfully introducing varieties of colour products harmonizing with the changing choice of upcoming generation.
- ✓ We are firmly committed to high quality production of world-class standard at most reasonable price and giving consumer's services of high satisfaction
- ✓ We do our best to create conducive environment to our customers at our various outlets.
- ✓ From the angle of national interest, our whole effort is found to center around at Solving the national problem of painting products.

1.3 Statement of the Problem

Like an every business organizations, Sujita paint is also established to earn certain amount of profit. Mostly success is measured in terms of profit. To earn desired level of profit, it is to be planned and managed. Cost-volume-Profit analysis provides the technique of planning frame work based on the annual report published. Performance of Nepalese industries cannot be considered as satisfactory. Poor performance is the outcome of poor planning, controlling and decision-making. This has raised the question whether Nepalese managers are competent enough? Do they practice CVP tools and technique to carryout planning controlling function and decision-making? SP is currently facing problem to have fair estimate of total cost, total revenue and profit at various sales volume. Due to the lack of application of profit planning tools, they can't forecast budgeted sales to recover total cost and to achieve profit. In the above light, the study attempts to answer the following research questions.

- ✓ Is the company practicing CVP analysis for its profit planning?
- ✓ What is the profit ability and performance of SP?
- ✓ How is the risk associated with SP?
- ✓ What are the major difficulties faced by SP in the application of CVP analysis?

1.4 Objectives of the Study

The main objective of this study is to examine”cost –volume profit analysis as a tool to measure the effectiveness of sujita paint” To achieve this, the following objectives have been carried out:

- ✓ To study the application of CVP analysis as a tool of budgeting.
- ✓ To analyze and evaluate the profitability and financial performance of ‘sujita paint’
- ✓ To examine and assess the risk of the company with the help of operation leverage technique.
- ✓ To make recommendations to improve sales and profit of sujita paint on the basis of study result.

1.5 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 paints Industry, 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 SP as a very important tool of PPC.

1.6 Limitation of the Study

This study consists of some limitations, which can be presented as follows:

- ✓ The study covers the data of five years only i.e. 2063/64 to 2067/68.
- ✓ The focuses limit over the availability of data and sufficient literature.
- ✓ Analysis is concentrated in some managerial, financial and accounting aspect and it does not cover the areas of enterprises.
- ✓ The comprehensive and the accuracy of the study are based on the data available from the management of SP.
- ✓ Being a research as a student and due to the limited resources constraints, the study is neither comprehensive nor extensive.
- ✓ The research is based upon the primary and also secondary data.

1.7 Organization of the study

The whole study has organized into five different chapters. Each chapters and unit will be on the prescribed format of thesis writing to the partial fulfillment of MBS program. Each unit gives the clear picture or road map of the study.

First chapter consist of an introduction of the study in this chapter, separate unit of background, significance, objectives and limitations of the study mentioned.

In second chapter various relevant studies such as different books, journals, articles and previous thesis mentioned.

Third chapter described review of literature. Review of literature is very useful tool of the study because it gives guideline for the researcher to verify the steps to be taken.

Other chapters includes in next chapters accordingly such as research methodology, analysis, interpretation, finding, conclusion and recommendations.

The chapter five deals with summary, conclusions and recommendations. Beside this, bibliography and appendices are included in the last of the research.

CHAPTER-II

REVIEW OF LITERATURE

2. In this chapter the researcher has been reviewed the related literature from different books, journals, previous studies and other reliable sources. As for this study concern, journals of account, previous thesis, related books, reports related research works has been briefly reviewed.

2.1 Profit

A payment or commitment to a person undertaking the hazards of enterprise, remuneration or reward for uncertainty bearing, “pure” profits residual and cannot ordinarily be predetermined. By the way of contrast, risk, it is being calculable in advance, like rent, and frequently insurable, as a cost rather than a profit. In any objective probability sense, profit can be accurately measured only in expected : hence any preliminary imputation of profit is wholly subjective in character and is labeled accordingly (Koheler, 1975:379-380).

Several economists have their different views in respect of the term profit. According to F.B.Hawley, profit is the reward for risk taking in business Schumpeter expressed that an entrepreneur earn profit as a reward for his introducing innovation. J.M.Keynes held the view that profit resulted from favorable movements of general price level. Robinson and Chamberlain opined that the greater the degree of monopoly power the profit made by the entrepreneur (Kapur, 1993:115).

In marketing excess of selling price over all cost and expenses incurred in making a sale.

In finance, the reward to the entrepreneur for the risks assumed by him or her in the establishment, operation and management of a given enterprise or undertaking (Jerry, 1983:396).

2.2 Planning

Planning is essential for accomplish goals. It reduces uncertainty and provides direction to employees by determining the course of action in advance, formal planning, indicates the responsibilities of management and provide an determination of what should be done, how the goals may be received as what individuals are to assume responsibility and to be held accountability (Chaudhari,1972:10)

The planning process of the enterprise would generally involve four fundamental step(Pandey,1985:216)

- ✓ Establishing the objectives.
- ✓ Determining the short-range objectives or goals.
- ✓ Developing strategies.
- ✓ Formulating profit plan or budgets.

Planning is deciding in advance who will do what a certain time and how it is to be achieved. In order to achieve anything of importance it is necessary to look ahead and plan. It focuses in on making thing happen. It is the first management function.Planning involves the determination of objectives based on intelligent forecasting and development of prosperity of any organization in a competitive and ever-changing environment. Planning is essential to accomplish goals. It reduces uncertainty and provides direction to the employees by determining the course of action in advance (Pandey, 2003:238)

2.3 Profit Planning and Control

Once the planning is determined, it must be out under control . controlling shares management activity and for this ,managers compare actual performance against the planned find out the decision taking remedial steps to remove the deviations. Immediate action should be taken to remove the deviation to make an improvement in the performance because promptness is the essence of an effective control. Controlling is the

measurement and correction of performance in order to make sure those enterprise objectives and the plans devised to attain them are accomplished (Kothari, 1990:69)

Profit planning involves streamlining activities in order to get employees profit minded and to secure maximum benefit from minimum effort and expenditure. A best result seem to be obtained from a single product, The planner is a given the right to prove economics, the organization, the made of operation, the pricing in the marketing or any other fact of making and selling the product that in his judgment affects profit acquiring from that product. The concentration of profit efforts upon to gross traditional boundaries of he enterprise to translate need from one group to another and to obtain consumed profit building efforts among these who can affect profit are the fundamental factors that contribute to the success of profit planning (Chamberlain). Profit planning is a comprehensive plan expressed in financial terms by which an operating program is effective for a given period of time. Business managers are continually involved in planning, organizing and controlling the operation of both large and small business organizations. Budgeting is one of the most important management tool used to plan and control business operations. Budgets are financial plans prepared as a guide to plane and control business operations. A financial plan must be designed to serve as a guide for the activities. Best results are obtained when the planning period is the same as the company's fiscal year. The annual budget is broken down by months, weeks and days of operations. The budget should be designed to co-ordinate the effort of the sale department and the other entire department (Bajracharya, et.at, 2004:344).

Controlling means evaluating the firm's activities against the plan and deciding what should be done if the plan is being followed. It is a process of ensuring that actual activities confirm to plan activities. Control helps ion

correction Therefore, Planning and controlling are the major functions of management (Lynch & Williamson, 1995:112).

Of course, it is difficult to confess the actual meaning and definition of PPC. But now a days it has been realized that PPC is somewhat, rather than narrow traditional view of a budget as a critically derived set of quantitative schedules prepared by an accountant. In the past year, there has also been a tendency to view the budget primarily as mathematical mode for an organization development by computer programmers.

- ✓ These views completely overlook the three most relevant aspect of the PPC concept.
- ✓ PPC requires major planning decisions by management.
- ✓ PPC entails pervasive management control activities.
- ✓ PPC recognizes many of the critical behavioral implication through the organization.

In comprehensive sense we can say that, PPC one of the most important approaches that has been developed to facilitates effective performance of the management process.

2.3.1 Principle and Purpose of profit planning and Control

The main principle and purpose of profit planning are as follows:

- ✓ To provide a realistic estimate of income and expenses for a period and the financial position at the close of the period detailed by areas of management responsibility.
- ✓ To provide a co-ordinate plans of action, which is designed to active the estimates reflected in the budget.
- ✓ To provide a comparison of actual results with those budgeted and an analysis and interpretation on of deviation on by areas responsibility to procedures in building future plan.
- ✓ To provide a guide for management decision in adjusting plans and objectives as uncontrollable conditions change.

- ✓ To provide a ready basis for making forecasts during the budget period to guide management in making day-to-day decisions (Welsch, 1992:255)

2.3.2 Advantages and Importance of Profit Planning and Control

A profit plan is a financial narrative expression of the expected results from the planning decision. It is called the profit plan or budget because it states the goals in terms of time expectations and expected financial results (return on investment profit costs.) for each major segment of the entity. Many benefits are derived from budgeting although it is a means not an end in itself. PPC is a feed forward process, it makes an evaluation of the variables likely to affect future operations of the enterprise. It predicts the future with reasonable precision and removes uncertainty to a great extent (Pandey, 2003:112).

The main advantages or importance of comprehensive profit planning and are as follows:

- ✓ PPC focuses basic policies into initiatives.
- ✓ It sets responsibilities of employees in relation to each function.
- ✓ It creates the feeling of co-operation and understanding between different departments of enterprises.
- ✓ It leads to maximum and most economical utilization of material, labour, capital and other resources with a view to ensure maximum return.
- ✓ It forces the management to keep adequate and correct historical data in the business.
- ✓ In competitive management to plan the future, the budgeting process forces management to look ahead and become more effective and efficient administration in the business operations.
- ✓ It forces the management to take necessary steps for getting satisfactory results.

- ✓ It improves the quality of communication. The enterprises objectives budget, goal, plan, authority and responsibility and procedures to implement plans are clearly written and communicates through budgets to all individuals in the enterprises. This results in better understanding and harmonious relations among managerial and sub-ordinates.
- ✓ Develops and atmosphere of profit mindedness and cost consciousness.
- ✓ It highlights upon the efficiency of lack of it in the business and thus helps the management to take remedial action.
- ✓ It tends to remove the cloud of uncertainty that exists in many firms especially among lower levers of management relative to basis policies and enterprises objectives.
- ✓ Profit planning necessitates a periodical and critical appraisal of every elements of a business.

2.3.3 Basic Assumption and Limitation of profit plan

There are so many assumptions for using profit-planning programs. First of all it is required to measure the basic plan in terms of money. Secondly co-ordination every aspect of the business for the optimum profit goals and thirdly, profit give guidelines about what to do? It thing happened as forecast but it also gives guidelines of things workout differently from the forecast.

- ✓ in developing and using of profit planning and control program, the following additional limitations should be kept in mind.
- ✓ The profit plan based on estimates.
- ✓ PPC program must be continually adopted to fit changing circumstances.
- ✓ Execution of a profit plan will not occur automatically.
- ✓ The profit plan is not a substitute of management.

2.4 Cost-Volume-Profit Analysis as a Tool of profit planning and Control

CVP analysis is an important tool of profit planning because it provides the information about the behaviour of cost in relation to volume, volume of production or sales where the business will break-even sensitivity of profit due to variance of output, amount of profit for a projected sales volume and quantity of production and quality of production and sales for the target profit level etc. Therefore CVP analysis may be defined as a managerial tool showing the relationship between various ingredients of profit planning. CVP analysis is an important media through which the management can have an insight into effects on profit on account of variance in cost and sales and take appropriate decisions. CVP analysis is great helpful in managerial decision-making. Especially cost control and profit planning is the fundamental part of the overall management functions. Profit can be done only when the management has the information about the cost of the product and selling price of the product.

2.5 Concept of Cost-Volume- Profit Analysis

In dictionary we find that cost is price paid to acquire, produce, accomplish or maintain anything volume in mass or quantity of something or amount, profit is the ratio of such pecuniary gain to the amount of capital invested and analysis is resolution, separation or breaking into parts. In facts, CVP analysis is an analytical tool for study the relationship between volume, cost, price, and profit. Basically CVP analysis is the technique involves finding the most favorable combination of different types of costs. CVP analysis provides the managers with a powerful tool for identifying those courses of action that will or will not increase profitability. CVP analysis is the technique that explores the relationship, which exists, between cost, revenue, output level and resulting profit. CVP analysis can be extended to cover the effects on profit of changes in the selling price or service fees, cost,

income tax rate, total cost, total revenue, and profit at various sales volumes. CVP analysis provides the management with a comprehensive overview of the effects on revenue and costs of all kinds of short-run financial changes. It is related to profit, sales volume and cost. CVP analysis provides information regarding (Minankarmi, 2003:4.01).

- ✓ Minimum level of sales to avoid losses
- ✓ Sales level to earn target profit
- ✓ Effects of changes of price, cost and volume of profit
- ✓ New break-even point for changes
- ✓ Impact of expansion plan on CVP relationship
- ✓ Products those are most profitable and least profitable
- ✓ Whether to continue or discontinue the sales of product or operation of plan
- ✓ Effects on operation profit with the increase in fixed costs.

CVP analysis can be extended to cover the effects on profits of changes in selling price service fees, income tax rate, product mix etc. it estimate total cost, total revenue and profit at various sales volume. It provides only an overview of the profit planning process. CVPA provides management with comprehensive overview of the effects on revenue and costs of all kinds of short run financial changes. It is related to profit, sales volume and cost (Munankarmi, 2003:4.01).

Cost volume profit (CVP) analysis examines the behaviour of total revenues total cost and operating income as changes occur in the output level, the selling variables cost per unit and fixed cost of a product (Horn green, Dater & Foster, 2003:136).

Cost volume profit analysis is the analysis of the variables cost, volume and profit. Such an analysis explores the relationship existing amongst cost, revenue, activity levels and the resulting profit. It aims at measuring variances of cost with volume. On the profit of a business, cost

volume profit (CVP) relationship is the most significant factor. The CVP analysis an extension of marginal costing. It makes use of principles of marginal costing. It is an important tool of planning. It is quite useful in making short run decisions, the institute of chartered accountants of India, Sep 2004:2.16)

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 word conditions that a firm will face like most models, which are abstractions from reality. CVP analysis is a subject to number of underlying assumptions and limitations. Never the less it is powerful tool for decision making in certain situation (Drury, 2000:17)

2.5.1 Use of CVP Analysis in Profit Planning

Planning, controlling and the decision- making are the essential managerial functions. CVP analysis helps manages to plan for profit, to control cost and make decision. As such it helps (Munankarmi, 2002:123-124).

- ✓ To determine the break-even point in terms of unit or sales value
- ✓ To determine the margin of safety.
- ✓ To estimate profits or losses at various level of output.
- ✓ To assess the likely effects of management decisions as an increase or decrease in selling price, adoptions of new method of production to direct labour and increase output.
- ✓ To help management to find the most profitable combination of costs and volume.
- ✓ To determine the optimum selling price.
- ✓ To determine the sales volume at which the profit goal of the firm will be achieved.
- ✓ To determine the most profitable and least profitable product.s
- ✓ To determine new break-even point for change in fixed or variable cost.

2.5.2 Application of CVP Analysis

Business organization is run to earn a profit. Planning is the fundamental part of the overall management function. Profit planning can be done only when the management has the information about the cost of product, variable cost, fixed cost and selling price of the product. Profit of a business organization is affected by selling price of the product, volume of sales, unit variables costs, fixed cost and sales mix. The most important factor that affects the planning for profit is cost (both fixed and variable) and volume of sales. The CVP relationship will be established by break-even analysis. CVP analysis is applied especially for (Munankarmi, 2003:01-4.02).

- a. Contribution Margin Analysis
- b. Break-Even Analysis
- c. Profit-volume Analysis

2.6 Break-even Analysis

Break-even analysis is the term used to study of the relationship between cost, volume and profit at various level of activity. It is the most widely known from of CVP analysis. Break-even analysis is a special case of CVP analysis.

Break-even analysis uses the same concepts as contribution analysis. However, it emphasizes the level of output or productive activity at which sales revenue exactly total costs that is there is no profit or loss. Break-even analysis rests upon the foundation of cost variability components of cost. It is usually applied on a “total company” basis (Saksena, 1995:112-113).

The break-even point is that point where total revenue equals total costs incurred, thus it is the point at which a company begins to earn a profit. There is neither a profit nor a loss at the BEP. Although management typically plans for a profit each period, the break-even point is concern, if sales fall below the BEP, losses are incurred. Management must determine

the break-even point in order to compute the margin of safety. When planning new venture or product lines, management can quickly measure the likelihood success finding the projects BEP.

2.6.1 Determining the Break-even Point

The following three approaches can be used to compute the break-even point.

- a. contribution Margin Approach (Income Statements)
- b. Formula Approach (Equilibrium Method)
- c. Graphic Approach

a. Contribution Margin Approach:

Contribution margin is the excess of revenue over all variable costs related to particular sales volume. A product lines contribution margin represents its net contrition to pay off fixed cost and to profit. Adding contribution margin CVP analysis changes the make up of the equations as well as the format of the income statement. The equation now becomes.

$$S - VC = CM - FC = NI \text{ (i.e. Contribution)}$$

Contribution margin may be expressed as total absolute amount, a absolute amount, a ratio and a percentage. The variable cost ratio or variable cost percentage is defined as all variable costs divided by sales. Thus a contribution margin ratio of 20% means that the variable cost ratio is 80 percent (Hongren & Sundem, 1995:49)

$$\begin{aligned} \text{Contribution Margin Ratio} &= \frac{\text{Sales} - \text{Variables Cost}}{\text{Sales}} \\ &= \frac{\text{Sales} - \text{Variable Cost}}{\text{Sales}} \\ &= 1 - \frac{\text{Variable Cost}}{\text{Sales}} \end{aligned}$$

The CM ratio of 20% or 0.20 indicates that 20% of sales are available to cover fixed costs and generate profit. In the other words, Rs 0.20 of Rs 1 sales is available to cover fixed costs and earn a profit. Since profit at the BEP is zero, dividing fixed costs by the contribution margin ratio gives the sales volume that is necessary to cover total fixed costs.

b. Formula Approach:

The most popular practical approach to the break-even point and cost volume profit analysis is the formula also known as the equation. The formula approach uses an algebraic equation to calculate the break-even point. The answer provided by solving the equation may sometimes need to be rounded to whole numbers of units or lot sizes. The rounding of break even point unit is always done upward because this will provide a small profit rather than the small loss that would be shown from rounding downward (Rainborn, 1993:89).

The BEP can be computer in tremes of unit or in tremes of monetary value of sales volume or as a percentage of estimated capacity while formula approach is followed. The calculation in the equation approach is similar to that of the contribution margin statement approach. The equation is merely a restatement of the other. To develop the cost volume profit equation.

Contribution Margin Approach	Symbol or Equations
Sales volume (Unit)	Q
Selling price per unit	P
Sales revenue (Rs.)	Q x P
Less: Variable cost	Q x VCPU
Contribution margin	Q x P - Q x VCPU
Less: Fixed cost	FC
Net profit	Q x P – Q x VCPU - FC

The table helps to understand the computation of the net profit easily, in which the multiplication of the sales volume and selling price per unit has generated the total sales revenue. When we deduct variable cost from the sales revenue then the result comes as a contribution margin. Contribution margin measures the organization profitability and higher the contribution margin shows better position of an organization but it is not sufficient indicator at all where the fixed cost included in fixed assets are not included. Net profit is that profit which shows the proper profitability position of an organization and it is taken as a basic indicator to measure the financial position of an organization.

2.6.2 Application of Break-Even Analysis

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

- ✓ Determination of profit at different level of sales and margin of safety.
- ✓ To find the level of output to get the desired profit.
- ✓ Effect of price reduction on sales volume and change in sales mix.
- ✓ Effect of fixed cost or variable cost changed on sales volume.
- ✓ Selection of most profitable alternative, make or buy decision and drop and or add decisions.

2.6.3 Assumption of Break-Even Analysis

Contribution analysis and break-even analysis are based on a specific set of assumption that should be clearly understood. These underlying assumptions are (Maheshwari, 2000:182-82).

- ✓ All cost can be classified in to two parts, fixed cost and variable cost.
- ✓ There is a relevant range of validity (activity) for using the result of the analysis and sales change.
- ✓ There is only one product or in case of multi products, the sales mix among the products remains constant.

- ✓ Base management policy about operation will not change materially in short run.
- ✓ The general price level (inflation/deflation) will remain essentially stable in the short run.
- ✓ Sales and production levels are synchronized, that is inventory remains essentially constant or zero.
- ✓ Effectiveness and productivity per person will remain essentially unchanged in the short run.
- ✓ If any of the above assumptions were changed, revised budget would be needed for a new analysis.

2.6.4 Limitations of Break-even Analysis

Break-even analysis in many business situations can be used effective decision making, but there are many shortcomings or limitations in its analysis and interpretations. Some of these can be listed as (Maheshori, 2000:183-84).

- ✓ The assumptions of producer's market phenomenon do not hold good for all types.
- ✓ The fixed cost may remain constant as well as the variable cost may not vary in fixed proportion at different levels of output.
- ✓ With variance in the prices of the items or services, which also depend on the factors, affecting the demand and supply will certainly affect the demand of the commodity. The phenomenon is not covered in break-even analysis.
- ✓ Identification of fixed variable costs involved in production process is very complicated. A shift in product mix may change the break-even point.
- ✓ Customers may be given certain discount on purchase to promote sales. The revenue may not be perfectly variable with level of sales output.

2.6.5 Application of Break-even Analysis

The applications of break-even analysis are as follows:

- ✓ Sales volume required to produce desired operation profit/target net profit.
- ✓ Sales volume required to produce the desired profit after tax.
- ✓ Operation profit at a given level of sales volume.
- ✓ Effect on operation profit at a given percentage increase in sales volume (in Rs).
- ✓ Addition sales volumes required offsetting a reduction in selling price or sales volume needed to maintain present profit level or a sales volume to offset reduced selling price.
- ✓ Effect of changes in fixed cost (Munankarami, 2002:132).

2.7 Sensitivity analysis on CVP Analysis

Sensitivity analysis is the measurement of elasticity of the change in the CVP factors on break-even point or given profit. The strategist should focus more on the factor, which is more sensitive or responsive for profit. To measure the sensitivity of CVP factors one can see the impact of certain percentage or amount change in volume price or cost factors on net profit. In other words, sensitivity analysis is the measurement of responsiveness in outcome with the change in determinant variables. We know that the goal of business enterprises is To Whom It May Concern: maximizing profit. Profit is the excess of revenue over the total cost.

$$\text{Profit} = \text{Total Sales Revenue} - \text{Total Sales}$$

Net profit = Sales Unit x SPPU – Sales Unit x VCPU – Fixed Cost – Taxes.

So that, Profit = F (Sales volume, selling price, VC, FC, tax etc.)

Means profits are the function of volume, price, VC, FC, Taxes and so on. But none of the factors remain unchanged : some times the manger can intentionally change the price and the cost factors as a part of strategic decision. But the strategy focuses more on the factor, which is the more

sensitive or responsive for profit. So to measure the sensitivity of CVP factors, we can see the impact of certain percentage or amount of change in volume, price or cost factors on net profit (Bajracharaya, et.al, 2004:245).

2.8 Risk Measurement on CVP Analysis as Operation Leverage

Operating leverage tells us how profit change in sales. It is evident that profit change more rapidly than sales. Why do profit change more rapidly than the sales? It is because some costs do not change say if sales decline variable costs decline in the ratio so that contribution margin also decline proportionately. But fixed costs do not decline so the net operating income decline more rapidly. The same thing applies in the case of increase well. Sales revenues changes but some part of costs, known as fixed cost, remains unchanged. This usually net operating changes is called the operating leverage.

Operating leverage can be measured in terms of the “Degree of operating leverage” (DOL). DOL shows the times of percentage change in net operating income of the given percentage change net operating change income (NOI) or EBIT associated with a given percentage change in sales (Pandey, 2004:245).

$$\text{DOL} = \frac{\text{percentage Change in Net Operating Income}}{\text{Percentage Change in Sales}}$$

Alternatively,

$$\text{DOL} = \frac{\text{Contribution Marine}}{\text{Net Operating Income}}$$

$$\text{DOL} = \frac{Q (\text{SP} - \text{VCPU})}{Q (\text{SP} - \text{VCPU}) + \text{fixed cost}}$$

Effect of price and volume change: A change in price invariable affects volumes. A price reduction may increase demand of the product and consequently, may result in increased volume. On the other hand, increase in price may adversely affect tile demands and thus reduce volume increase

substantially. Similarly, a price rise may reduce profits if there is a material fall in volume.

Effect of change in variable costs: The impact of the changes in variable cost on profit is straight forward if it does not cause any change in selling price or volume. An increase in variable costs will lower P/V ratio, push up the BEP and reduce profits. On the other hand if the variable cost declines, P/V ratio will increase and BEP will be lower and profits would rise.

Effect of changes in fixed costs: A change in fixed costs does not influence P/V ratio. Other factors

2.10 Review of Related Studies

The main purpose of the Literature review is to find out the work that has been done in the area of research problem under the study. Moreover, what has not been done in the field of the research study being undertaken?

There are some research papers concerning CVP analysis in the area of profit planning and control. Very few dissertations have been submitted with the relation to CVP analysis in the area of profit planning and control. Very few dissertations have been submitted with the relation to CVP analysis. Out of the previous research studies only three researches are conducted under the CVP analysis. Therefore, the study is attempted to review the previous research work on profit planning and control as well as management accounting. The previous related studies to CVP analysis are as follows.

Neupane (1995) has conducted the research work on the topic "Profit planning and control in Manufacturing public Enterprise in Nepal: A case study of Hetauda Cement Industry Limited". The main objectives focused by him were to interpret the trend of profit planning of Hetauda Cement Industry Limited and to see how far the HCIL is participating in contributing in the national development. The nature of data used was primary as well as secondary.

Neupane has pointed out some major findings based on his analysis.

- ✓ Power is unnecessarily centralized, so that decision making is only from top level.
- ✓ No clear concept of forecasting and implementation is followed.
- ✓ Inadequate planning of profits, due to lack of experts and planners.
- ✓ Inadequate supply of raw materials and planning of materials.
- ✓ Lack of entrepreneurship and commercial concept in the organization.
- ✓ Lack of expressed and well defined rules, responsibilities and authorities.

Ojha (1995) has done a research on the profit planning and control in manufacturing public enterprises in Nepal. For case study, he has selected two public enterprises namely Royal Drugs Limited (RDL) and Herbs Production and Processing Company Limited (HPPCL). His research was in partial fulfillment of MBA, submitted to the Central Department of Management, Tribhuvan University. The study has covered a five year period from FY 2046/47 to 2050/2051. His objectives of the study were :

Ojha has pointed out various findings and recommendations based on the analysis of data and information. Some of the major findings are as follows:

- ✓ Inadequate planning of profit due to lack of skilled manpower.
- ✓ Inadequate authority and responsibility to planning department.
- ✓ Various costs are not diagnosed as controllable and non-controllable expenses.
- ✓ Pricing system is not scientific.
- ✓ Failure due to inadequate forecasting system.
- ✓ Lack of entrepreneurship and commercial concepts in overall operations of enterprises.

Badu (1996) has submitted a research about profit planning manufacturing public enterprises. In his research, he has tried to point out some features and problems of profit planning in Nepalese manufacturing PEs. For this study he has selected a public enterprises. Dairy Development Corporation and some features and problems of profit planning, prevailing practices and premises for implementing profit planning in Nepalese PEs are discussed.

The main objectives of this research work were as follows:

- ✓ To analyze the various functional budgets adopted in the enterprise.
- ✓ To examine the capacity utilization of DDC.
- ✓ To assess the financial performance of DDC using BEP analysis
- ✓ To provide required suggestions on profit planning.

For accomplishing the above state objectives, Mr. Badu has made his research covering the time period of five years from 2049/50 to 2053/54. Research methodology was followed through secondary procedure but for the essential information data were also used.

Badu listed the following major findings.

- ✓ DDC has practiced short term planning rather than long term planning.
- ✓ The corporation has no proper practice of segregating cost into variable and fixed.
- ✓ The company fails to maintain its periodic performance report systematically.
- ✓ The top level executive are only involved in planning and decision making and lower level participation is not found.
- ✓ There is not separate planning department and expert plan is prepared on traditional and adhoc basic.

Thapa (2000) has tried to point out some features and problems of profit planning in the context of Nepalese manufacturing enterprises: A comparative study on profit planning of Dairy Development Corporation and Sita Ram Dairy Milk, submitted to the Central Development of Management, T.U. Thapa has listed the following major findings.

- ✓ DDC has concentrated its whole effort on the survival of the company.
- ✓ Sales figure (both targeted and achievement) of SRD are more inconsistent variable than that of DDC.
- ✓ Both companies have positive correlation between actual and target sales.
- ✓ SRD's capacity utilization is higher than that of DDC's capacity utilization.
- ✓ SRD has highly been successful to maintain coordination than DDC.
- ✓ Overall responsibility of profit planning is under finance department in SRD whereas it is under account department in DDC.
- ✓ Both companies have not proposed profit planning except sales and production plan.
- ✓ DDC and SRD have been suffering from operating loss for many years. The main cause is low contribution margin ratio, high fixed cost and underutilization of capacity.

Bhusal (2000) has submitted the thesis on the topic "A Comparative study on Profit Planning in Manufacturing and non-manufacturing Public Enterprise of Nepal". He had focused his study to highlight the current practice of profit planning and its effectiveness in Nepalese public enterprises. The study covers only 5 years 2051/052 to 2054/055. In his research paper he has used both primary as well as secondary data.

Major findings of his study were as follows.

- ✓ There is no adequate and clear-cut co-ordination among various units in the organization.
- ✓ Objectives of the enterprises are controversial. There is conflict between profit and social goals.
- ✓ There is inadequate planning of profit due to lack of planning experts.
- ✓ There is lack of entrepreneurship and commercial concept in over all operation o the enterprises.
- ✓ The plans are based on adhoc and unrealistic forecast.
- ✓ There is red-tapism and delay in the implementation phase as shown by the achievement to bleow the targets.

Adhikari (2004) has done the research on "profit planning in **Manufacturing enterprises: A case study of DDC" with the objectives of:**

- ✓ To analyze the functional budgets on sales and production secotr of DDC.
- ✓ To analyze various accounting ratios, major the profitability and efficiency of DDC, analyze the budget target and its achievement along with reason of deviation (if any), provide valuable recommendations and suggestions based on analysis.

Adhikari has summarized his remarkable findings are:

- ✓ DDC has practice short term planning rather than long term planning: the time is covered by interim period any by product.
- ✓ Production and sales of DDC is increasing annually between actual and targeted sales is positive.
- ✓ The corporation has no proper practice in suggestion cost into fixed and variables.
- ✓ There is positive correlation between target actual productions of milk.
- ✓ Most of the budget figures are higher than actual figure.

- ✓ DDC has applied stable inventory policy with opening stock of inventory but this policy is not applied in practices. It has 1% store losses and 0.5% distribution losses of milk.
- ✓ DDC has prepared direct labour budget only based on technical and administration; it is not prepared according to the time and rate.
- ✓ Capacity utilization is very high but production ratio is very low.
- ✓ The CVP analysis shows that DDC is operating below the break even point and flexible budget of DDC shows 90% variable cost of sales revenue.
- ✓ DDC utilized corporate fund as long term loan and from international agencies like US aid.
- ✓ DDC has not clear attainable objectives, policies and strategies, timely accounting and auditing work are not maintained, financial statements accounting are out of the financial rules.
- ✓ The present management doesn't have any program of perfect profit planning.

2.11 Research Gap

Research is a continuous process having on ending point. Every researcher tries his/her efforts to fulfill the gap, which has not been covered by the previous research work. But According to the owner of the's paint industry nobody have done research on this industry. So, there is not any research gab. So, research has attempted to fulfill the following matters:

-) Most of the studies have been done in respect of comprehensive profit planning and control of manufacturing public enterprises but this study examines the current practice of CVP analysis as a tool of PPC in SP as a private dairy sector.
-) Previous studies have a compared private dairy to DDC but this research has been contributed sole study on private dairy with reference to ND.

) This study gives a high degree of value as the process and the data used in a systematic way studies of CVP analysis.

) Previous studies have not covered risk measurement associated with ND but this study focuses the risk measurement with the help of operating leverage technique.

So this study will be fruitful to those interested Person, Scholars, Student, Teachers, Government, Businessman, Civil society and other stakeholders for academic and policy prospective.

CHAPTER- III

RESEARCH METHODOLOGY

Research is the systematic method of finding right solution for the problem where as research methodology refers to the various steps undertaken by the researchers to find the optimum solution. For this study the financial data of the last five years from the Yr. 2061/62 to 2065/6066 has been collected, examined and evaluated them to make a conclusion. Methodology helps to analyze, examine and interpret various aspect of research work. Methodologies state the method with which data have been used in interpretation of such data to fulfill the objectives. For this purpose following research method has been used in this study.

3.1 Research Design

Research design is the plan and strategy of investigation conceived so as to obtain answers to the research questions and to control the variance. Research design helps in the analysis of data related to research topic. It is a controlling media for the collection of data and it helps to collect accurate information relating to the research subject. Research design is the strategy for concluding research. It describes the general framework for collecting, analyzing and evaluating data.

For the study the researcher has been used both the analytical and descriptive research design for the purpose of CVP analysis. Descriptive design has been used for the conceptual development and scientific and systematic framework of the research and analytical design has been used for the systematic interpretation of numerical data used in this study.

3.2 Sources of Data

There are vital role of the data in research to clear and complete research objectives. Without the data, methodology cannot be utilized to bring the conclusion. Proper and required data should be collected from needed sources.

The secondary data has been used in this study. Basically, secondary data has been collected from the annual reports of SP, company's publications, books and journals/magazines, booklets and internet etc. Thus, secondary is the main source of data and other necessary information has been obtained throughout the research from authorized staff of SP, Hatkhola, Biratnagar. Some of these data were published while other was unpublished.

3.3 Population and Sample

Total Paint companies operated as a joint stock companies are population of this study. There are many Joint Stock Paint Companies. Sujita Paint is taken as sample for study. It is taken as sample study because of the famous paint Industry operating in Biratnagar. Which produce qualitative paint product.

3.4 Process of Data Collection

The research has been done within three months. The first one month has taken for the data collection, next month for analyzing the collected data and last one month for the preparing of the research report more prescribed and systematically.

3.5 Period Covered

This research study covers the last five years i.e. fiscal year 2061/62 to 2065/66 and Sujita Paint's strength and weaknesses of managerial planning and other related things are identified.

3.6 Data Processing Procedure and Tools Used

Relevant data of this study are collected through secondary sources. Tables, charts and graphs have been used as per requirement. Accounting, mathematical and statistical tools are also used to analyze collected data.

3.6.1 Accounting and Financial Tools

Generally, the accounting and financial are used for the purpose of the assessment of the financial position to a particular organization. They are as follows:

- a. Contribution Margin Ratio
- b. Break-Even Analysis
- c. Gross Profit Margin Ratio
- d. Net Profit Margin Ratio
- e. Operating Ratio
- f. Degree of Operating Leverage

3.6.2 Mathematical and Statistical Tools

Generally, the statistical tools are used for attaining accuracy on analysis as well as on study. They are as follows:

a. Arithmetic mean (\bar{X})

Arithmetic mean is a set of observations in their sum divided by the number of observations. For e.g. the arithmetic mean (\bar{X}) of n observation x_1, x_2, \dots, X_n is given by :

$$(\bar{X}) = \frac{1}{n} \sum_{i=1}^n X_i$$

b. Standard Deviation (σ)

Standard deviation, usually denoted by the Greek letter small sigma (σ), is the positive square root of the arithmetic mean of the squares of the deviations of the given values from their arithmetic mean. For the frequency distribution of the given values from their arithmetic mean for the frequency distribution $x_i/f_i, i=1,2,3,\dots,n$

$$\sigma = \sqrt{\frac{1}{N} \sum_{i=1}^n f_i (x_i - \bar{X})^2}$$

Where,

\bar{X} = Arithmetic mean of the distribution

$$\frac{\sum f_i X_i}{N}$$

c. Coefficient of Variance (C.V.)

Hundred times the coefficient of dispersion based upon standard deviation is called coefficient of variance.

$$CV = 100 \times \frac{s}{\bar{x}}$$

d. Karl Pearson's Coefficient of Correlation (r)

Among the several mathematical methods of measuring correlation, the Karl Pearson's method has been popularly known as Pearson's co-efficient of correlation is most widely used in practice. It is one of the very few symbols that are used universally for describing the degree of correlation between two series (Gupta, 1999:E-10.11). It is denoted by 'r'. In the present context, the coefficient of correlation is computed in order to measure the relationship between budgeted and actual sales of Sujita Paint.

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

Here,

N = Number of pairs of x and y observed

X = Budgeted sales

Y = Actual sales

R = Person correlation coefficient

The correlation should always lie between $\{-1, +1\}$, $r_{xy} = +1$ denotes the perfect positive correlation between two variables. As such $r_{xy} = -1$ denotes the perfect negative correlation between two variables. $R_{xy} = 0$ denotes independent variables or say non-correlation between the two variables.

e. Probable Error [P.E.(r)]

The probable error of the coefficient helps in interpreting its value. With the help of probable error, it is possible to determine the reliability of the value of the coefficient in so far as it depends on the condition of random sampling (Gupta, 1999:E-10.25). The probable error of the coefficient of correlation is obtained by using the following formula:

$$\text{P.E.} = 0.6745 \frac{\sqrt{\sum Zr^2 A}}{\sqrt{N}}$$

Here,

0.6745 is the constant value

r = Coefficient of correlation

N = No. of pairs of observation

If the value of 'r' is less than probable error [i.e. if $r < \text{P.E.}(r)$]: there is no significant relation between X and Y.

If the value of r is more than 6 times the probable error [i.e. if $r > 6\text{P.E.}(r)$]; there is a very significant relation between X and Y.

CHAPTER-IV

PRESENTATION AND ANALYSIS OF DATA

The main objectives of this study is to examine the application of "Cost Volume- Profit Analysis in "Sujita Paint". For accomplishment of this objective, a definite course of research methodology has been followed, which is described in third chapter. In this chapter, secondary data have been used to accomplish basic objective as well as analyzing sales trend, budgeted and actual sales. The statistical tools, cost plain, inventory ratio, profitability ratio, operating leverage and CVP analysis are used to reach to the conclusion.

The presentation of data is the basic organization and classification of the data for analysis. The analysis of data assists to interpret the facts and fulfill the objectives of the study by using different tools and techniques.

Collected data have been explained and analyzed to clear the objectives of the study. Basically, following two techniques are used to explain the collected data.

- a. Descriptive Techniques
- b. Quantitative Techniques

Under this, following tools

a. Accounting and Financial Tools:

Generally, the accounting and financial analysis are used for the purpose of the assessment of the financial position of the organization.

They are as follows:

- a. CM Ratio
- b. Break Even Analysis
- c. Gross Profit Margin Ratio
- d. Operating Ratio
- e. Degree of Operating Leverage

ii. Mathematical Statistical Tools:

Generally the Statistical Tools are used for attaining accuracy on analysis. They are as follows.

- a. Arithmetic Mean
- b. Standard Deviation
- c. Co-efficient of Variance
- d. Karl Pearson's Coefficient of Correlation

This study has tried to examine CVP analysis as a tool to measure effectiveness, present practice of CVP analysis, possibility of CVP analysis to be applied to strengthen the Sujita Paint. It presents the analysis and interpretation of data from FY 2063/064 to FY 2067/068.

4.1 Analysis of Sales Variances

To identify the sales trend of past and to forecast the possible future trend of the Sujita Paint, previous years budgeted sales and their achievement is presented in the table. To analyze the previous sales data of sujita paint, the following table presents the budgeted sales and actual sales achievement (in Rs.) From FY 2063/64 to FY 2067/68.

Table 4.1: Sales Budget and Achievement

FY	Budgeted Sales (Target) (Rs.)	Actual Sales (Rs.)	Achievement	Variance (unfavorable) = (Actual sales- Budgeted Sale)	
				In Amount	In Percentage
2063/064	1780124.64	1647512.14	92.24%	138602.59	7.76%
2064/065	1965361.10	1854711.27	94.37%	110649.83	5.63%
2065/066	2063107.01	1968204.09	95.40%	94902.92	4.60%
2066/067	2944690.46	2565708.80	87.13%	378981.66	12.87%
2067/068	3270041.32	2945983.17	90.09%	324058.14	9.91%

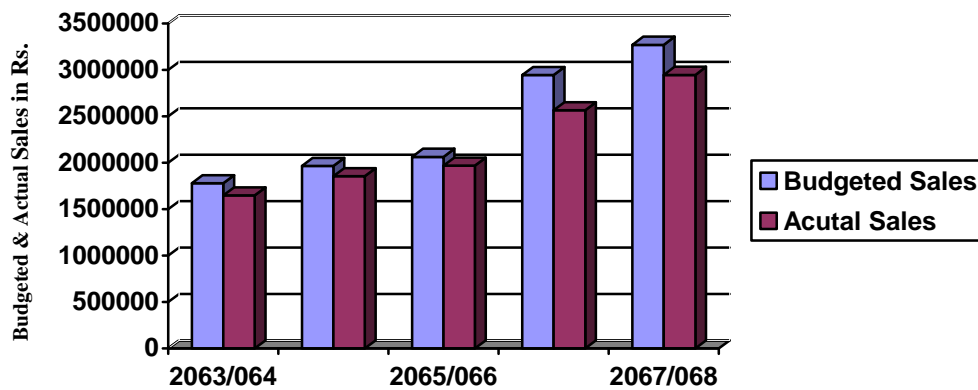
Source:P/L a/c and B/S of ND of relevant years.

The above table depicts and Sujita Paint is not able to achieve the budgeted sale during the study period of five years. So the sales performance of the enterprise is not quite satisfactory. The sales achievement of ND in the FY 2063/64 was 92.24 percent. However it is sharply invereased by 2.13% and reaches to 94.37% in FY 2064/65. Such increasing trends came up to FY 2065/66 and at the end of FY 2066/67, the sales achievement decreased to 87.13%. In FY 2067/68 the sales achievement increase by 2.96%.

The above table also shows that budgeted sales of the enterprise is in invereasing order \from FY 2063/64 and actual achievement is also in increasing order. In FY 2065/66 the achievement percentage is 95.4%, which is the highest achievement during the study of 5 years and lowest achievement, is 87.13%, which is in the FY 2066/67. Non-achievement of the target set may be due to certain factors like, inefficiency of management, higher margin of budgeted sales, political disturbances, quality of products, delivery of products etc.

The above table clears that there is no favorable variance in any fiscal year. The unfavorable variance between target sales and actual sales are 7.76%, 5.63%, 4.60%, 12.87% and 9.91% in the FY 2063/64 to 2067/68 respectively. This unfavorable variance percentages shows that there is no systematic and scientific sales plan. To reduce or remove unfavorable variance percentage, the management should set the budgeted sales according to capacity of the enterprises. Budgeted and Actual sales of SP can be presented in the bar diagram and graph as below:

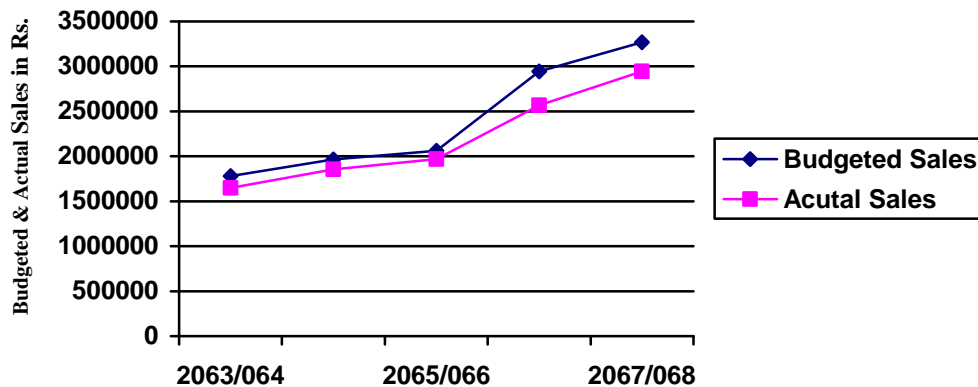
Figure 4.1: Bar Diagram of Budgeted Sales and Actual Sales.



The above diagram indicates that actual sales never meet the budgeted sales. The highest achievement is 98.40% in the FY 2065/66 and the lowest achievement is 87.13% in the FY 2066/67.

Figure 4.2 : Graphical Presentation of Budgeted Sales and Actual Sales.

Figure 4.2: Graphical Presentation of Budgeted Sales and Actual Sales.



The above figure no. 4.2 shows the trend of sales budget and sales achievement. The graphical presentation indicates that the gap between target sales and actual sales is not very high but actual sales are always below the budgeted sales. The gap between budgeted and actual sales is very high in FY 2066/67 and low in FY 2065/66.

Table 4.2: Summary of Statistical Value

Detail	Budgeted sales (x) (Rs. In '00000')	Actual sales (Y) Rs.in '0000'
Mean	24.058	21.97
SD	5.89	4.83
C.V.	24.48	22.00
Correlation (r)	0.995	
Probable Error (P.E.)	0.003	

The above table no. 4.2 shows that budgeted mean sales of 24.058 is more than actual sales of 21.97. It shows that there is no any proper planning for making budget and for achieving the target of the budget. Similarly, the standard deviation and coefficient of variance of actual sales is 4.834 and 22.01% respectively, which is less than standard deviation and coefficient of budgeted sales i.e. 5.89 and 24.48%. It indicates that budgeted sales are more variable than actual sales. It may be due to inefficiency of the budget planner. The above table shows that the correlation between budgeted and actual sales is positive i.e. 0.945. It shows clearly that is budgeted and actual sales increase the actual sales also increase and vice-versa. The correlation (r) 0.995 between budgeted and actual sales is greater than 6 x P.E. (6x0.003=0.018). It indicates that the value of r is highly significant. So, we can easily say that the actual sales of SP are in the same direction towards the budgeted sales.

Here, Budgeted sales (x) are assumed to be independent variable and actual sales (Y) is assumed to be dependent variable.

The regression line of Y on X be

$$Y - \bar{Y} = r \frac{\sum y}{\sum x} \frac{\sum x}{\sum x^2} (X - \bar{X})$$

$$\text{or, } Y-21.974=0.995 \frac{4.83}{5.89} f_X Z^{24.058A}$$

This regression line shows that there is positive relationship between the budgeted sales and actual sales. With the help of this line, we can estimate the expected actual sales in coming period.

4.2 Comparison between Actual Sales and Profit/Loss Trend of SP

SP is running in profit since the beginning period to fiscal year 2065/66 but the profit is not very satisfactory and is fluctuating. The main cause of 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 4.3 : Actual Sales and Profit/(Loss) trend of SP

Fiscal Year	Actual Sales (Rs.)	Net Profit/(Loss) in (Rs)
2063/064	1647512.14	37606.26
2064/065	1854711.27	50097.44
2065/066	1968204.09	54548.18
2066/067	2565708.80	63095.69
2067/068	294598.31	81095.99
Total	109821194.9	286443.59
Average	21964238.98	572887.18

Source : Audit Report of SP

The above table no. 4.3 shows that SP is earning profit but is not in the satisfactory level. From the analysis of this table, it is found that minimum profit of Rs. 376,06.266 is earned in the FY 2063/64 and maximum profit of Rs. 810,95.998 is earned in the FY 2067/68. The profit of SP seems to be in increasing trend in strating. If the corporation will control the administrative costs, other non-manufacturing costs, production costs and factory expenses, it would earn satisfactory level of profit in coming year.

4.3 Cost plan of Sujita Paint

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

Cost of goods is also called production cost. Raw materials, production salary and wages, fuel and lubricant costs, electricity cost, water cost, lab chemical cost etc. are the example of cost of goods sold.

Administrative costs and management costs are those costs, which are not directly related with production. Administrative costs are salary and wages, allowances and incentives, donation, depreciation, interest etc.

Similarly, selling and distribution costs are those costs, which occur in selling activities of any organization such as transportation costs, promotional cost, advertisement etc.

The costs are segregated under administrative and distribution categories as per the view of SP staffs, intuition judgments and nature of expenses. Like the transportation cost expensis 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% variable administrative and 70% selling and distribution cost. In the same way, telephone charges and miscellaneous expenses are categorized as 60% variable administrative and 40% selling and distribution cost. Salary given to administrative staffs is

categorized under variable administrative cost and salary given to sales boy is categorized under variable selling and distribution expenses.

4.3.1 Variable Cost Analysis

Variable costs are based on activity. The variable costs should be zero activity. They change directly with change in activity level in a responsibility center. Therefore, if output is doubled, variable expenses is to be doubled, if output increases by 15 percent, the variable expenses also increased by 15 percent, if output is zero, the variable cost also is zero. But variable cost per unit might be changed due to increase in price of material, labor and inventory costs etc.

Table 4.4 (a) : Variable Cost Sheet

FY/ Details	2063/64	2064/65	2065/66	2066/067	2067/068
Total	138588.59	158997.68	18650.70	206254.76	218591.59
Increase or Decrease		0.1473	0.3458	0.4883	0.5773

Source : Audited Report of SP

The above table no. 4.4 reveals all variable cost which are used to product colour products in terms of cost of sales administrative or operating costs and selling and distribution costs. The total variable cost in FY 2063/64 is 138588.59. It was increased by 14.73% in FY 2064/65. The highest increment is in FY 2065/66 by 17.3% and the longest increment is in FY 2067/68 by 0.0598. The reason of increase in cost may be attributed to high increase in purchase of raw material. To reduce the cost of sales, SP should try to control in wastage of raw materials, cement powder expenses etc.

4.3.2 Fixed Cost Analysis

Fixed costs are the cost associated with those inputs, which do not vary with the change in volume of output or activity within a specified range of activity or output (relevant range). Fixed costs, thus, remain constant

whether activity increases or decreases within a relevant range. For example, the rent of factory or office premises, property, insurance, senior executive's salary, lease payments, depreciation etc. remain the same whether there is an increase or decrease in the volume of activity.

Table 4.4 (b) : Fixed Cost Sheet

FY/Details	2063/64	2064/65	2065/66	2066/67	2067/68
Factory Insurance Premium	17957.00	9365.00	-	-	-
Repair & Maintainance	84868.08	64535.78	7096.20	64283.68	69832.68
Total	102825.08	73900.78	7096.20	64283.68	69832.68
Increase or Decrease	-	(0.2813)	(0.9310)	(0.3748)	(0.3290)

Source: Audited Report of SP

Table 4.5 Administrative Cost

Details / FY	2063/064	2064/065	2065/066	2066/067	2067/068
Audit Fee	20000	20000	20000	22283	26513
Repair & maintainance	8167	6195	12723	14418	20429
Rent	31200	32400	33600	35160	42800
Printing & Stationary	3091	3755	7947	16380	17421
Rates & Taxes	3750	6735	2500	6200	6700
Medical & Treatment				360	800
Director's Remuneration	6600	6600	13200	21600	26800
Cleaning Charges	9931	3382	18800	1800	1750
Guest Expenses			2210	1231	1180
Lab Expences			25177	5816	9848
Depriciation	9913	10956	11176	12729	14840
Total	77332	93571	132463	140977	179401

In the above table no. 4.5, it is observed that the fixed cost of sales of SP is more in other years than the FY 2063/64 as taken the base year. The fixed cost is highest in the FY 2063/64 and it may be attributed to the increase in expenses of repair & maintenance and factory insurance premium. Fixed administrative cost is in increasing trend over the study period. The fixed administrative cost's highest in FY 2067/68 due to more expenses in repair & maintenance, printing & stationary, director's Remuneration, depreciation. The lowest fixed administrative cost is in the FY 2063/64 over the study period. Fixed distribution cost is increased compared to the FY 2063/64 taken as a base year. It is highest in the FY 2067/68 due to more expenses in advertisement. It can be concluded that ND is not using effective planning to control the fixed costs.

4.4 Profitability Ratio Analysis

The word 'profitability' may be defined 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 efficiently utilizing the funds at its disposals or in other words, how far the management has been successful in maximizing its profits or minimizing its losses, if any.

The word 'profitability' ratio means measures the operating efficiency of the company. Besides management of the company, creditors and owners are also interested in the profitability in relation to investment. But the present study concerns only with the profitability in relation.

Table 4.6 : Income Statement for the Ended From 2067 to 2068

Details	2063/64	2064/65	2065/66	2066/67	2067/68
Cost of Sales	1647512.14	1854711.27	1968620.41	2565708.80	2945983.17
Variable Cost	1385885.03	1589976.81	1865094.70	2062544.60	2185915.96
Fixed Cost	102825.08	73900.78	7096.20	64283.68	69832.68
Total	1488711.01	1663871..62	1872190.90	2126828.18	2255748.64
Add: Opening Stock of Raw Material	174683.96	124952.00	15365158	367445.47	598215.43
Add: Opening Stock of Finished Goods	137053.29	179123.30	225269.32	273442.70	302823.71
Less: Closing Stock of Raw Material	117352.00	155151.53	367445.47	298943.27	352118.97
Less: Closing Stock of Finished Goods	117912.39	22526.93	273442.70	284655.05	34309.81
Total	1465183.93	1790274046	1610223.63	2440308.13	2461570.71
Grand Total	82328.22	64436.81	358396.78	125400.67	484412.46

Source : Audited Report of SP

4.4.1 Gross Profit Margin

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

Table 4.7: Gross profit Margin of the Years.

FY	Sales Amount	Gross Profit	Gross Profit Margin
2063/064	1647512.17	182328.22	11.06%
2064/065	1854711.27	64436.81	03.47%
2065/066	1968204.00	358396.78	18.20%
2066/067	2565708.80	125400.07	04.80%
2067/068	2945983.17	484412.46	16.04%
Total	10982119.41	1214974.94	11.06%
Mean	2196423.89	242994.98	12.06%

Source : Audited Report of SP

The above table no. 4.7 shows that the gross profit margin of SP is fluctuating. Maximum ratio over the study period is 18.2 in the FY 2065/66 and the minimum ratio is 3.47 in the FY 2064/65. The mean gross profit margin is 11.06% which is not so favorable condition for the company. It can be concluded that gross profit is very poor in every fiscal year.

4.4.2 Net Profit Margin

Net profit margin measures the relation between net profit and sales of the firm. A high profit margin indicates adequate return to the firm and thus enables in withstanding in adverse economic situations. When sales price is declining, cost of production is rising and demands for the product are falling. A low profit margin shows just the opposite. Net profit margin is computed by dividing net profit by sales. We have,

$$\text{Net Profit Margin} = \frac{\text{Net Profit After Tax}}{\text{Sales}}$$

Table 4.8 Net profit Margin of the years

FY	Sales Amount (Rs)	Net Profit (Rs.)	Net Profit Margin (%)
2063/064	1647512.14	46985.68	02.85%
2064/065	1854711.27	46085.04	02.48%
2065/066	1968204.09	32734.94	02.67%
2066/067	2565708.80	6274595.52	10.70%
2067/068	2945983.17	446843.39	15.16%
Total	10982119.49	781774.69	07.12%
Mean	219642.89	156354.93	07.12%

Source : Audited Report of SP

The above table no. 4.8 shows that the net profit margin of SP is fluctuating over the study period. The highest net profit margin is 15.16% in the FY 2067/68 and lowest is 1.67% in the FY 2065/66. The mean net profit margin of SP is only 7.12% it proves that the firm's net profit situation is still dissatisfactory.

4.4.3 Operating Ratio

The operating expenses ratio explain the change in the profit margin ratio. It is calculated by dividing operating expenses like as cost of goods sold plus selling expenses and administrative expenses (excluding interest) by sales. Lower the operating ratio indicates higher the operating profit and vice – versa. We have,

$$\text{Operating Ratio} = \frac{\text{Cost of Goods sold} + \text{Operating Expenses}}{\text{Sales}}$$

Where,

$$\text{Operating Expenses} = \text{Administrative Expenses (excluding interest)} \\ + \text{Selling and Distribution Expenses.}$$

Table 4.9 : Operating Ratio of Years.

FY	Sales Amount (Rs.)	Cost of Sales (Rs.)	Operating Expensis (Rs.)		Operating Ratio
			Administration Expenses	Selling Distribution Expenses	
2063/064	1647512.14	317886.39	77332	39173.15	0.26%
2064/065	1854711.27	1587532.07	93571	55257.61	0.94%
2065/066	1968204.09	1610223.63	132463	64901.12	0.12%
2066/067	2565708.80	2440308.13	140977	85669.46	1.04%
2067/068	2945983.17	2461570.71	179401	99689.46	0.93%
Total	10982119.49				
Mean	2196423.89				0.82%

Source : Audited Report of SP.

The above table no. 4.9 shows that the operating ratio of Sp is high over the study period. It is more than 1 in the FY 2066/67. The operating ratio is less than 1 i.e. 0.26, 0.94, 0.92, 0.93 in the FY 2063/64, 2064/65, 2065/66 2066/67, 2067/68 respectively. But still it is not in good position for the company as it indicates the high cost of good sold and operating expenses of SP resulting low operating profit. The mean operating ratio is slightly less than 1 so, it indicates that the firm is poor to minimize and control the cost of good sold and operating expenses.

4.5 Degree of Operating Leverage

A ratio between contribution margin and EBIT is known as operating leverage or a ratio between the percentage changes in EBIT and percentage changes in sales amount is known as operating leverage. It measures the degree of business risk associated at a firm. Higher percent 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. We have,

$$\text{Degree of Operating Leverage} = \frac{\text{Contribution margin}}{\text{Earning Before Interest and Tax}}$$

Table 4.10 : Degree of Operating Leverage of the Years.

FY	Contribution (Rs.)	EBIT (Rs.)	DOL
2063/064	148162.045	41336.36	2.09
2064/065	119720.79	85998.14	3.02
2065/066	107710.26	7689.81	0.71
2066/067	281860.75	844174.41	2.99
2067/068	489480.60	912649.98	1.86
Total	109995.45	1876469.08	1.78
Mean	209999.09	375293.81	1.78

Source : Audited Report of SP

The above table no. 4.10 shows that operating leverage of SP is 2.09, 3.02, 0.7139, 2.995 and 1.86 FY 2063/64, 2064/65, 2065/66, 2066/67 and 2067/68 respectively. The mean of DOL is 1.787 if a sale increases by 1% the amount of operating profit (EBIT) increases by 1.787.

4.6 Cost Volume Profit Analysis

Analyses of various elements, which are used in Cost-Volumes-Profit (CVP) Analysis are :

4.6.1 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. It is calculated by using following formula:

$$\text{Contribution Margin} = \text{Sales Revenue} - \text{Variable Cost}$$

$$\text{Or, Contribution Margin} = \text{Fixed Cost} + \text{Profit}$$

Table 4.11 : Income Statement for the Year Ended from 2063/64

Details	2063/64	2064/65	2065/66	2066/067	2067/068
Sales	1647512.14	1854711.27	1968204.09	2565708.80	2945983.17
Variable Cost					
Cost of Sales	1385885.93	1589976.84	1865094.70	2062544.60	2185913.69
Administrative Cost	75999.24	91684.52	29829.66	138405.61	175987.98
Selling and Distribution Cost	37464.93	53329.12	62508.47	52.597.84	94599.5
Total Variable Cost	1499350.1	1734990.48	1957432.83	2283848.05	2456502.57
Contribution Margin	148162.04	119720.79	20771.26	281860.75	489480.60
Fixed Cost					
Cost of Sales	10282.50	73390.07	7096.20	6428.36	1026.46
Administrative Cost	1332.76	1886.47	1026.33	2271.39	3413.02
Selling And Distribution Cost	1708.23	1928.50	2392.66	3071.61	5089.96
Total Fixed Cost	105866.07	77715.76	112122.21	696216.69	111149.21
Less: Other Expenses	4689.70	4080.88	68616.00	4506.20	6851.21
Net fixed Cost	101176.36	73635.76	43506.21	65120.49	42637.21
Profit	46985.68	46085.04	32734.94	216740.26	446843.34

Source: Audited Report of SP 46985.68

The Table No: 4.11 shows that the contribution margin of SP was increasing trend over the study period. Among five fiscal years. The maximum contribution margin is Rs. 489480.60 in FY 2067/68 and minimum is Rs. 10771.26 in FY 2065/66.

4.6.2 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 sales, selling price to a greater extent will depend upon the volume of production. It is calculated by dividing contribution margin by sales.

$$\text{We have, Profit Volume Ratio} = \frac{\text{Contribution Margin}}{\text{Sales}}$$

Talbe 4.12 P/V Ratio of the Years

FY	Sales Amount	Contribution Margin (Rs.)	P/V Ratio
2063/064	1647512.14	148162.04	0.0899
2064/065	1854711.27	11972079	0.0645
2065/066	1968204.09	10771.26	0.00547
2066/067	2565708.80	281860.75	0.1099
2067/068	2945983.17	489480.60	0.1661

Source : Audited Report of SP

The above table no. : 4.12 show the profit volume ratio of Sp over the study period, which is in fluctuating trend. The highest P/V Ratio is 0.1662 in FY 2067/68 and lowest is 0.00547 in the FY 2065/66.

4.6.3 Break-Even-Analysis

Break-even analysis is the most widely known form 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 "no profit no lose". If the sales or production is higher than the break even point volume, there will be profit and if the sales or production is less than BEP sales, there will be loss. Break even point can be determined by using these methods.

a. Algebraic or Formula Method

b. Graphic or Chart Method

a. Algebraic or Formula Method

$$\text{BEP} = \frac{\text{Total Fixed Cost}}{\text{Profit Volume Ratio}}$$

Table 4.13 : Break Even Point of the Year

FY	Fixed Cost	P/V Ratio	BEP (Rs.)
2063/064	101176.36	0.0899	1125432.25
2064/065	73635.28	0.0645	1141639.69
2065/066	43506.02	0.00547	7953601.46
2066/067	65120.47	0.1099	592543.13
2067/068	42037.21	0.1662	256541.57

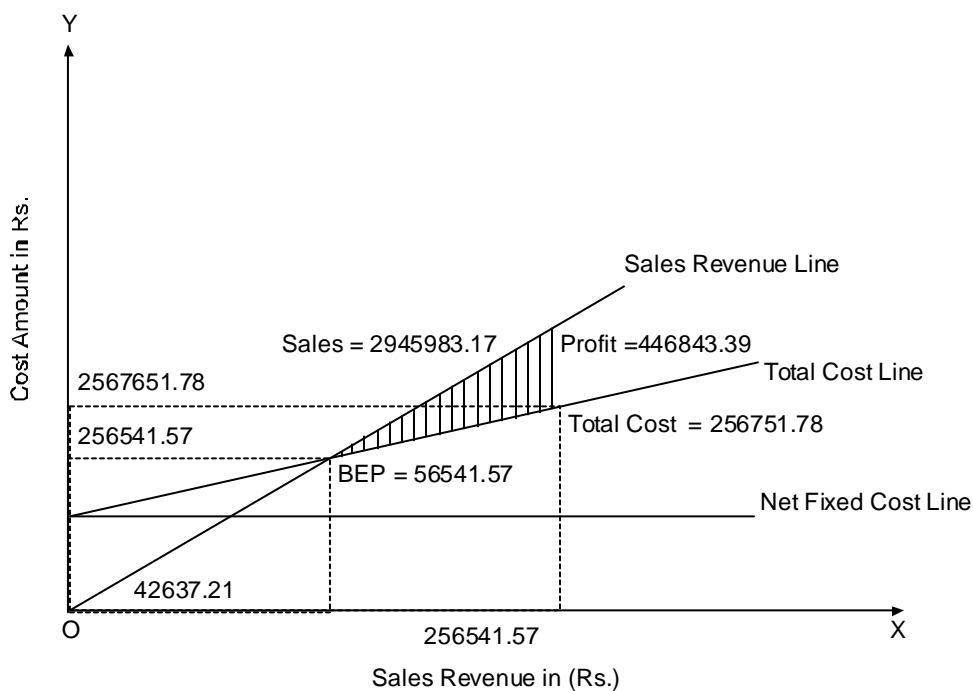
Source : Audited Report of SP

The BEP of SP is shown in table no. 4.13 and it is in increasing trend over the study period of 5 years. The highest BEP of SP is Rs. 7953601.463 in the FY 2065/66 and lowest BEP is Rs. 256541.5764 in the year FY 2067/68.

b. Graphic or Chart Method

A specialized form of profit graph, called the break-even-chart, is frequently used to present diagrammatically significant cost-volume-profit relationship; relating total costs at various sales volumes to the expected revenue and profit or loss at each alternative volume. The break even chart is also for determining the break even point. The break even indicated in the chart is one at which total cost line and total sales line intersect with each other. The break even chart of SP for various fiscal years is given below, where sales revenue is shown in x-axis and cost amount is shown in y-axis.

Figure 4.3 : Graphic or Chart Method of Break – Even Analysis FY 2065/66.



The above chart shows that fixed cost is always equal within a certain level of activity. So fixed cost curve is parallel to x-axis. The total cost curve is sloping upward to right side because total cost amount increases with increases in sales revenue (Sales Units x SPPU). Total cost curve starts from fixed cost line. The amount of fixed cost is Rs. 42637.21. is also total cost when the sales revenue is zero. The sales revenue curve originates from the origin because sales revenue is zero when the sales volume is zero. The chart shows that the sales revenue curve is sloping upward to right. An equilibrium point between total cost and total revenue curve is known as break even point where both the total cost and total revenue is equal to Rs. 256541.5764 if the actual sales amount is less than break even sales amount. The firm will suffer from loss. Above chart clearly shows that the actual sales amount Rs. 2945983.171 is greater than the total cost amount Rs. 2567651.78 which generates the profit of Rs 496843.39. In the similar way, the presentation of Graphic or Chart Method of Break Even Analysis for other remaining fiscal years are as follows

Figure 4.4: Graphic or Chart Method of Break-Even Analysis for the Remaining FY (2063/64)

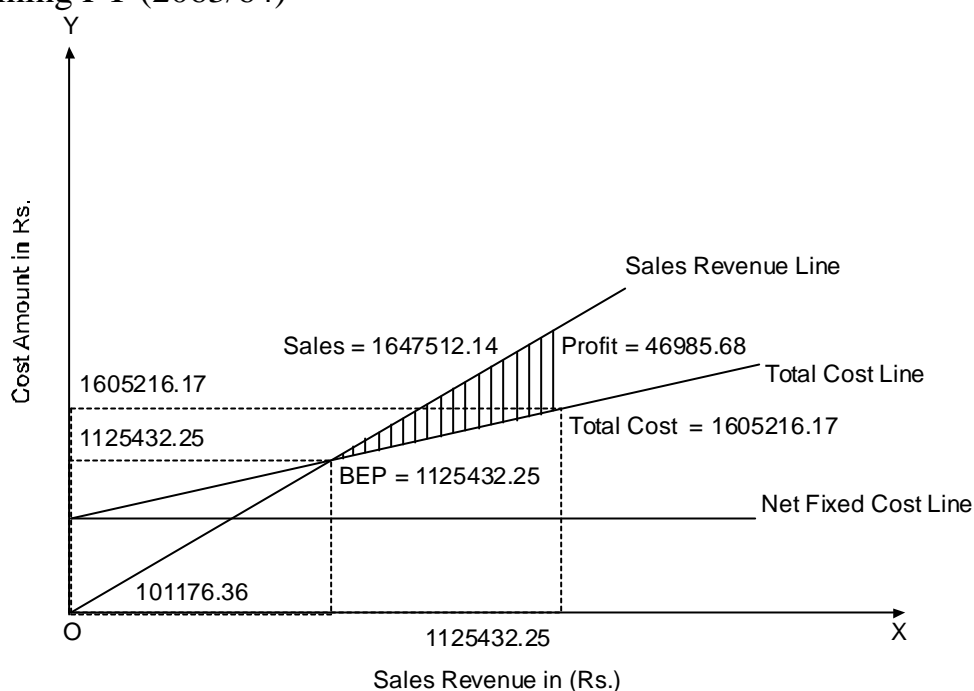


Figure 4.5: Graphic or Chart Method of Break-Even Analysis for The FY 2062/63

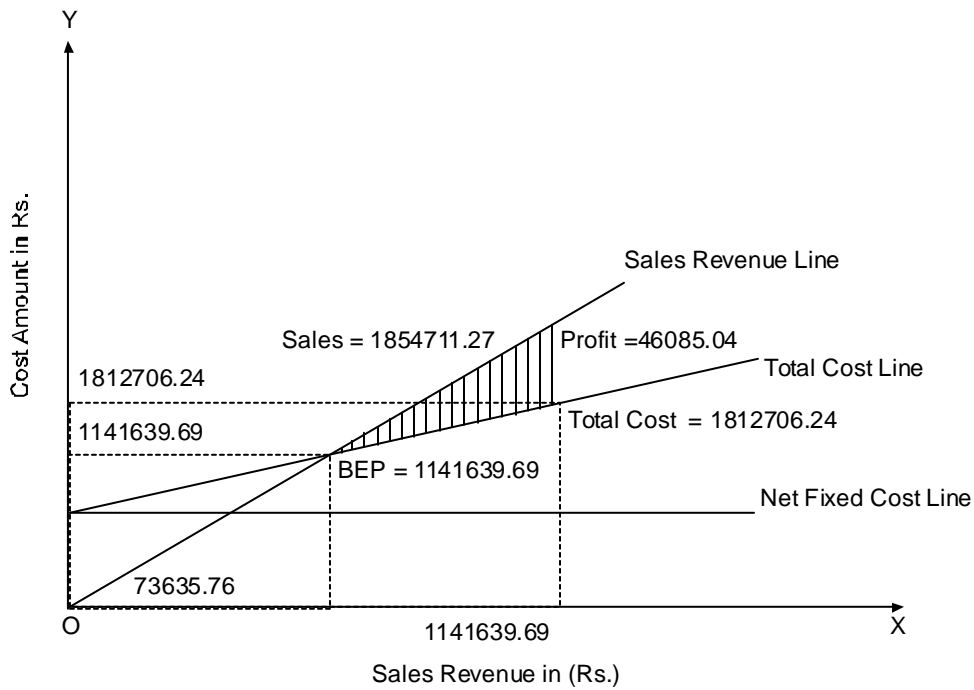


Figure 4.6: Graphics or Chart Method of Break- Even Analysis For the FY 2063/64

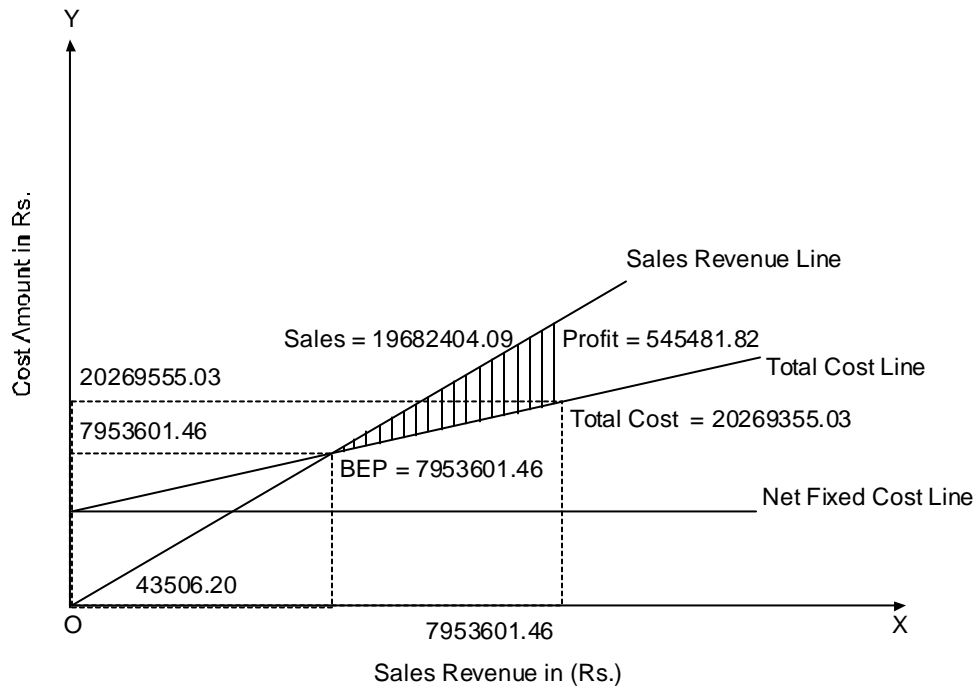
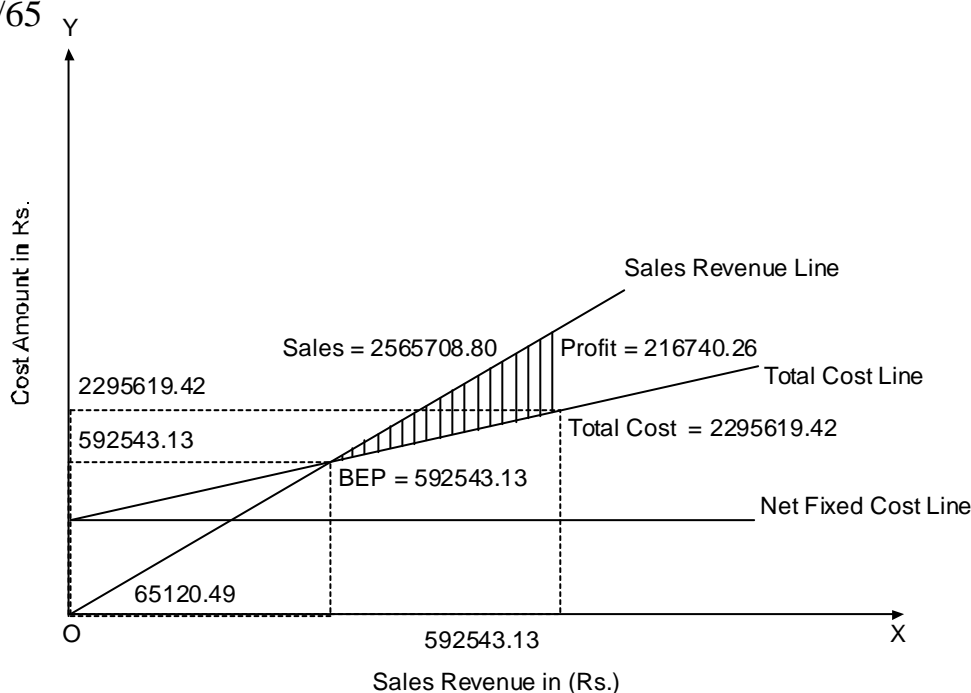


Figure 4.7: Graphic or Chart Method of Break-Even Analysis for the FY 2064/65



4.6.4 Margin of Safety

Margin of Safety is the difference between the budgeted or actual sales revenue and the break even sales volume. It states the amount by which sales can drop before loss begins to be incurred. Larger 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. Margin of safety can be calculated by using the following formula:

$$\text{Margin of Safety (MOS)} = \text{Actual Sales} - \text{Break Even Sales.}$$

Table 4.14 : Margin of Safety of the Years.

FY	Actual Sales	BEP Sales	Margin of Safety
2063/064	1647512.14	1125432.25	522079.89
2064/065	1854711.27	1141639.69	713071.58
2065/066	1968204.09	7953601.46	5985397.37
2066/067	2565708.80	592543.13	1973165.67
2067/068	2945983.17	256541.58	2689441.59

Source: Audited Report of SP

The above table no. 4.14 shows the margin of safety of SP over 5 years study period. The margin of safety is often regularly increased and decreased in every year and also in fiscal year 2065/66. we found negative mos. It mean BEP sales is highest than Actual Sales.

4.7 Change Effects and Relationship of CVP Analysis Factors

4.7.1 Change in Sales

The image of changes in sales value will affect to P/V ratio and BE sales. Increase in sales value increases the profit volume ratio and decrease in BE sales. So, there is positive correlation with profit and negative correlation with BE sales. If sales decrease, the effect will be and vice-versa. If it is assumed that sales increase and decrease by 10 percent and other things remaining constant, and then following results are obtained for the FY 2065/66.

Table 4.15: Income Statement with change of sales value for the FY 2065/66

Details	Change of Sales Value		
	Original	10% Increase	10% Decrease
Sales	2945983.17	3240581.48	2651384.85
Less Variable Cost	2456502.57	2456502.57	2456502.57
Contribution Margin	489480.60	784078.92	294882.28
Less: Fixed Cost (Net)	42627.21	42637.21	42637.21
Profit / (Loss)	446843.34	741441.71	152245.07
P/V Ratio (CM/Sales)	0.1662	0.242	0.0735
BEP (FC/PV Ratio)	256541.58	176186.82	580097.96

Source: Audited Report of SP

The above table no. 4.15 shows that with the increase in sales value by 10% the profit increases by Rs. 294598.37 and P/V Ratio increases from 0.1662 to 0.2402 but BEP decrease to Rs. 80354.76 and profit is decreased by Rs. 294598.27 when sales value is decreased by 10% P/V Ratio is

decreased to 0.735 and BEP is increased to Rs. 580097.96. It shows that there is positive relationship between sales revenue and P/V ratio and negative relationship between sales revenue and BEP.

4.7.2 Change in Fixed Cost

In general sense, fixed costs do not change within the relevant range. But fixed cost may change due to different conditions. Firstly, the fixed cost may be higher than variable cost due to more amounts spent for administrative improvements and acquiring assets. It may happen for a new corporation, well developed and still in the process of establishment. Secondly, the fixed cost may increase from the previous level, but the rate of increase may or may not coincide with variable cost. The fixed costs may increase/decrease due to underestimation and over estimation of fixed costs in the previous year. When there is rise in administrative improvement making the best utilization of assets and from the given amount of variable costs. If it is assumed that the fixed cost increases and decreases by 10 percent other things remaining constant, then following result is obtained from the income statement of FY 2065/66.

Table 4.16 : Income statement with change of fixed cost for the FY 2065/66.

Details	Change of Sales Value		
	Original	10% Increase	10% Decrease
Sales	2945983.17	2945983.17	2945983.17
Less Variable Cost	2456502.57	2456502.57	2456502.57
Contribution Margin	489480.60	489480.60	489480.60
Less: Fixed Cost (Net)	42637.21	46900.93	38373.48
Profit / (Loss)	446843.34	442579.67	451107.11
P/V Ratio (CM/Sales)	0.1662	0.1662	0.1662
BEP (FC/PV Ratio)	256541.58	282195.72	230887.42

Source : Audited Report of SP

The above Table no. 4.16 shows that there is no change in contribution margin and P/V ratio whether there is increase or decrease in fixed costs. P/V ratio is 0.166 and contribution margin in Rs. 489480.60 both cases. Only BEP is affected by change in fixed cost. If fixed cost is increased by 10%, the BEP is also increased to Rs. 282195.73. Similarly, when fixed cost is decreased by 10% the BEP also decreased to Rs. 230887.42

4.7.3 Change in Variable Cost

Change in variable cost mainly concerns with the operating efficiency of the corporation. The variable cost may increase due to increase in output and wastage caused by both controllable and uncontrollable factors. If the firm increases the output level, the firm has to make additional purchase of materials, employ more labors and bear more selling expenses. Secondly, the variable cost increase by wastage due to lack of skilled workers and leaders of workers being not responsible for increase in production overhead. Wastage in raw materials as well as uncontrollable factors such as increase in raw materials and other inputs are directly related to reduce production. The following income statement of 2065/66 shows the result outcomes from the changes in variable cost by 10 percent increases and decreases.

Table 4.17 : Income Statement with Change of Variable Cost for the FY 2065/66.

Details	Change of Sales Value		
	Original	10% Increase	10% Decrease
Sales	2945983.17	2945983.17	2945983.17
Less Variable Cost	2456502.57	2702152.83	2210852.31
Contribution Margin	489480.60	243830.29	735130.86
Less: Fixed Cost (Net)	42637.21	42637.21	42637.21
Profit / (Loss)	446843.34	201193.083	692493.65
P/V Ratio (CM/Sales)	0.1662	0.1662	0.25
BEP (FC/PV Ratio)	256541.58	513701.33	170548.84

Source : Audited Report of SP

The above table no. 4.17 shows that there are two conditions. First one, increase in variable cost by 10% shows inefficiency or occurrence of more wastage on materials and labor, then it undoubtedly, leads to decrease profit by Rs. 245650.25 and increase in BEP to Rs. 513701.33. Second one, decreased in variable cost by 10% helps to increase profit to Rs. 692493.65 and reduce BEP to Rs. 170548.84. The Table also clears that when variable cost is increased, P/V ratio is decreased and vice versa.

4.8 Major Findings of the Study

The major findings of this study have been presented corresponding to the objectives of the study.

- ✓ Proper Planning Aspect is virtually ignored in the company SP. The planning is not based upon some scientific base but its surface planning.
- ✓ SP has not practiced cost volume profit analysis tools for the profit planning and the company has not any policy for using CVP tools in coming fiscal years.
- ✓ The company has not practiced to apply appropriate and effective sales forecasting techniques like, survey method and statistical method. It uses market studies and experimentation method for sales forecasting.
- ✓ Budgeted sales have not been achieved during the study period as the highest achievement of actual sales on budget sales is only 95.40 percent in FY 2063/64 whereas the lowest one is 90.09 percent in FY 2065/66.
- ✓ The company has not applied any special technique for segregation of costs into fixed and variable costs.
- ✓ There is no separate costing system for allocation of expenses to each product.

- ✓ Variable costs have more portions as compared to fixed costs due to the high portions in variable costs like; cost of raw milk, water and electricity etc.
- ✓ The highest BEP of SP has been found Rs. 7953601.46 in FY 2065/66 and lowest BEP is Rs. 256541.58 in FY 2067/68. There is increasing trend in BEP, which increases the more challenges to increase the sales in the company.
- ✓ SP has fluctuating margin of safety, which is not in satisfactory level because first two year low mos third year BEP sales is too highest than actual sales and last two year mos is going to high.
- ✓ The company does not seem applying the effective managerial tools "Profit planning and controlled" for controlling its activity.

CHAPTER –V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

CVP is a greater helpful in managerial decision making, especially cost control and profit planning. It provides attention-decision making and problem solving backgrounds for important planning decisions, such as selecting distribution channels, pricing, special promotion and personnel hiring, "know your cost" is an essential theme for any managers. And CVP analysis helps to direct managerial attention to important problems and paves.

The study is completely related with CVP analysis of the SP as a tool of PPC, Sujita Paint aims to be the leading colour industry in country. It has been successfully introducing varieties of colours products harmonizing with the changing choise of upcoming 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, the company has failed to achieve budgeted sales during the study period. The company's financial (profitability) position is not satisfactory. So, the company couldn't run in a remarkable sales and profit.

5.2 Conclusion

Except the break-even calculation, the CVP 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 the installation cost of a new machine? What net income will be earned if the sales mix will be changed? So, the CVP analysis keeps a big value in the land of PPC.

For the achievement of the above advantages, the corporation has not applied CVP 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 materials, inefficiency of management and lack of skilled production specialist.
- ✓ The company always in profit eventhough it has electricity problem that's why it fulfill its customer's demand.
- ✓ SP can satisfy its customers and also its employees.
- ✓ It buys all raw materils and chemicals according to chemist advice and all producted goods are tested in lab befor launching in market.
- ✓ SP has not used BEP tools for planning. So the company is not able to earn a large. There is not perfect sales policy or sales planner; as a result the company is not able to meet the largest sales. The top-level management makes the decisions and policies. Target sales are always greater than actual sales.
- ✓ The major problem faced by the company is increase in the variable operating cost because it has 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 CVP analysis the following points are recommended SP must improve its profitability through the improvement of its short term performance for which some suggestions have been stated as follows:

- ✓ it is suggested to the SP for practicing the CVP analysis as a tool PPC for improving business performance through acquiring the valuable information about cost, revenue and profit.

- ✓ Cost plan in SP has not been maintained systematically. SP must establish a cost control program for maintaining a remarkable discipline on cost control by controlling wastages of raw materials, milk powder expenses, ice cream, chemicals, printing and stationary, director remunerations etc.
- ✓ The variable cost has been found very large in SP, which increases BEP amount. So, the company should reduce the variable cost by searching the economic resources of material and using the advance technology in production.
- ✓ The profit margin of the SP is very low, where as the operating ratio is too high. The management should follow regular supervision, inspection, evaluation and monitoring.
- ✓ SP should follow the new business strategies for exploring the economic, effective and efficient resources and improving the quality of working life of its employees.
- ✓ SP should develop a culture for reviewing its activities to control worthless task and developing proper strategies.
- ✓ The company has not depended proper segregation method of cost into variables and fixed cost. It is very important 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.

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APPENDIX I

SUJITA PAINT INDUSTRIES

Biratnagar, Morang

Balance Sheet

Particulars	2064	2065	2066	2067	2068
<u>Capital & Liabilities</u>					
Capital					
Proprietor Capital a/c	1032456.73	1257320.54	1481926.84	896179.36	1263618.50
Total	1032456.73	1257320.54	1481926.84	896179.36	1263618.50
<u>Assets & Property</u>					
Fixed Assets	35373.73	120375.87	1369.85	86101.09	95875.63
<u>Current Assets</u>					
Investors	634324.54	843247.89	1292123.53	645197.15	932463.45
Advance & Deposits	96302.22	58773.87	43435.00	24652.00	89904.78
Cash & Bank Balance	174320.54	243243.45	154828.46	148385.12	154.324.64
Total	904947.30	1145265.21	1390386.99	818234.27	1176692.87
<u>Current Liabilities & Provisions</u>					
Business & Other					
Accounts Payable	7864.30	8320.54	9830.00	8156.00	8950.00
Total	7864.30	8320.54	9830.00	8156.00	8950.00
Net Current Assets	897083.00	1136944.67	1380556.99	810078.27	1167742.87
Total	1032456.73	1257320.54	1481926.84	896179.36	1263618.50

APPENDIX II

SUJITA PAINT INDUSTRIES

Biratnagar, Morang

Income Statement

Details	2063/64	2064/65	2065/66	2066/067	2067/068
Sales	1647512.14	1854711.27	1968204.09	2565708.80	2945983.17
Variable Cost					
Cost of Sales	1385885.93	1589976.84	1865094.70	2062544.60	2185913.69
Administrative Cost	75999.24	91684.52	29829.66	138405.61	175987.98
Selling and Distribution Cost	37464.93	53329.12	62508.47	52.597.84	94599.5
Total Variable Cost	1499350.1	1734990.48	1957432.83	2283848.05	2456502.57
Contribution Margin	148162.04	119720.79	20771.26	281860.75	489480.60
Fixed Cost					
Cost of Sales	10282.50	73390.07	7096.20	6428.36	1026.46
Administrative Cost	1332.76	1886.47	1026.33	2271.39	3413.02
Selling And Distribution Cost	1708.23	1928.50	2392.66	3071.61	5089.96
Total Fixed Cost	105866.07	77715.76	112122.21	696216.69	111149.21
Less: Other Expenses	4689.70	4080.88	68616.00	4506.20	6851.21
Net fixed Cost	101176.36	73635.76	43506.21	65120.49	42637.21
Profit	46985.68	46085.04	32734.94	216740.26	446843.34

APPENDIX III

SUJITA PAINT INDUSTRIES

Biratnagar, Morang

Calculation of Mean, Standard Deviations and Co-Efficient of Variance

Fiscal Year	Budgeted Sales (X)	Actual Sales (Y)	x=X-X	y=Y-Y	x ²	y ²	XY
2063/064	17.86	16.48	(6.198)	(5.49)	38.42	30.14	34.03
2064/065	19.65	18.55	(4.408)	(3.42)	19.43	11.70	15.08
2065/066	20.63	19.68	(3.428)	(2.29)	11.75	5.24	7.85
2066/067	29.45	25.66	5.392	3.69	29.07	13.62	19.90
2067/068	32.70	29.46	8.642	7.49	74.68	56.10	64.73
N=5	X =120.29	Y =109.83	x =	y =	173.35	116.80	141.59

Calculation of Mean, Standard Deviation and Co-efficient of Variation

4. for the Budgeted Sales

$$\text{Mean } \bar{X} = \frac{\sum X}{N} = \frac{120.29}{5} = 24.05$$

$$\text{Mean } (\bar{Y}) = \frac{\sum Y}{N} = \frac{109.83}{5} = 21.97$$

$$\text{Standard Deviation } (\sigma_x) = \sqrt{\frac{\sum x^2}{N}} = \sqrt{\frac{173.35}{5}} = \sqrt{34.67} = 5.89$$

$$\text{Coefficient of Variation } (CV_x) = \frac{\sigma_x}{\bar{X}} \times 100 = \frac{5.89}{24.05} \times 100 = 24.48 \%$$

5. For Actual Sales

$$\text{Standard Deviation } (\sigma_y) = \sqrt{\frac{\sum y^2}{N}} = \sqrt{\frac{116.8}{5}} = \sqrt{23.36} = 4.83$$

$$\text{Coefficient of Variation } (CV_y) = \frac{\sigma_y}{\bar{Y}} \times 100 = \frac{4.83}{21.97} \times 100 = 21.98\%$$

Calculation of Correlation of Coefficient:

$$\therefore r_{xy} = \frac{\sum xy}{\sqrt{\sum x^2 \cdot \sum y^2}} = \frac{141.59}{\sqrt{173.35 \times 116.80}} = \frac{141.59}{\sqrt{20247.28}} = \frac{141.59}{142.29} = 0.995$$

$$\text{P.E. } (r) = 0.6745 \left| \frac{1 - Zr^2}{\sqrt{n}} \right| = 0.6745 \left| \frac{1 - Z(0.995)^2}{\sqrt{5}} \right| = \frac{1 - Z(0.99)}{2.24} = 0.003$$