MANAGEMENT ACCOUNTING PRACTICE IN SELECTED INDUSTRIES OF BALAJU INDUSTRIAL ESTATE

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RECOMMENDATION

This is to certify that the Thesis:

entitled

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of

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Submitted By:

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

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VIVA-VOCE SHEET

We have conducted the viva-voce examination of the thesis:

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and found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of requirement for Master of Business Studies (MBS)

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DECLARATION

I hereby, declare that the work reported in this thesis entitled "Management Accounting Practice in Selected Industries of Balaju Industrial Estate", submitted to Office of the Dean of Faculty of Management, T.U. is my original work done in the form of partial fulfillment of requirement for Master of Business Studies (MBS) under the supervision of Prakash Singh Pradhan, Associate Professor of Shanker Dev Campus, T.U.

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Acknowledgement

Management accounting is one of the important disciplines of management. It is the branch of accounting whose main objective is to help managers in overall managerial activities by providing various information and assisting in planning, controlling and decision making. Managerial accounting acts as a strategic business partner in support of managerial role in rational decision making. Management accounting has wide scope of application whether the business is manufacturing or trading. Realizing this fact, an attempt has been made in this thesis to explore the present practice of management accounting tools and techniques in selected industries of Balaju Industrial Estate.

I would like to express my sincere gratitude to my respected thesis supervisor Mr. Prakash Singh Pradhan, Associate Professor of Shanker Dev Campus for his continuous supervision, suggestion and guidance. Likewise I would like to express warm gratitude to Dr. Kamal Deep Dhakal, Campus Chief of Shanker Dev Campus, for helping me preparation of research proposal and draft of thesis.

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I hope this research will be helpful for stakeholders and helps for further research.

Finally I would like to remember all people who have directly and indirectly helped me during the preparation of this thesis.

Ram Chandra Nyaupane
Researcher

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Abbreviations

ABB	Activity Based Budgeting
ABC	Activity Based Costing
ARR	Average Rate of Return
BEP	Break Even Point
CSB	Central Bureau of Statistics
EOQ	Economic Order Quantity
FDI	Foreign Direct Tax
FNCCI	Federation of Nepalese Chambers of Commerce & Industry
IRR	Internal Rate of Return
IT	Information Technology
JIT	Just in Time Philosophy
JV	Joint Venture
LOB	Line of Business
LP	Linear Programming
MAIS	Management Accounting Information System
NPV	Net Present Value
PBP	Payback Period
PI	Profitability Index
PPC	Profit Planning and Controlling
SWOT	Strength, Weakness, Opportunities and Threat Analysis
TPC	Trade Promotion Centre
ZBB	Zero Based Budgeting

CHAPTER-I

Introduction

1.1 Background of the Study

The history of industrial development of Nepal is not so long. The process of development was started with the establishment of Biratnagar Jute Mill and Industrial Council in 1936 A.D. By then Morang Cotton Mills, Raghupati Jute Mills, and Juddha Match Factory were established till 1946 in Biratnagar. After the restoration of democracy in 2007 B.S., government established 'Udhyog Parisad' to encourage industrialization. 'Udhyog Parisad'' changed into 'Cottage and Village Industry Development' later.

Nepal has a very brief history of planned development process. It was only after the Royal Proclamation on October 10, 1955 the first five year plan (1956-1961) was initiated in 1956. The prime objective of the plan in the field of industrialization was to encourage and revive cottage and small scale industries. NIDC was also established in this period. An industrial policy was also formulated in 1957.

The second three year plan was initiated in 1961. In this plan, various industrial estates in different parts of the country were established with the help of NIDC, Germany and government itself. Five industries, all relating to cottage and small scale industries were established in the country.

The third five year plan was commenced in 1965. In the field cottage and rural industries 14 zonal offices and 10 district offices were established in this plan.

The fourth plan (1970-1975) stressed on the establishment of industry in the private An 'Industrial Development Centre' was set up in 1957 to create adequate climate for industrial development sector. New industrial policy 1974 was amended. Twenty seven public enterprises were established during the period.

In the fifth plan (1975-1980), cottage and village industries provisions were made to provide technical support, loan survey design and mobile training facilities through regional and district offices. The major achievements of this plan were the formation of agriculture lime factory, Hetauda Textile Factory and Bhaktapur Brick and Tile Factory. The main objectives of the sixth year plan (1980-1985) were to increase output, generate more employment opportunities and meet minimum basic needs of people. New Industrial Policy 1981 was amended in this plan.

In the seventh year plan (1985-1990), Bhrikuti Paper industries, Sugar Factory in Sunwal of Nawalparasi district were established; construction of Udayapur Cement Factory was also completed. Until the end of seventh plan, Nepal become self reliant in various industrial

products like noodles, cigarette, matches, battery, soft drink, beer, biscuits etc. However, mass economic indicators do not justify this estimation. After the restoration of multiparty system there was the absence of economic planning for two years. There were remarkable changes in government policy and programs in this eighth plan (1992-1997). The government put emphasis on private sector, open trade and liberalization. One window policy, new industrial policy 1992, labour act 1992 was the major policies adopted by the government in this plan period.

The ninth plan (1997-2002) was given name before birth. Because the full document of this plan was released only on 1997 A.D. after several amendments. This period was not normal. The development works were hampered by peace and security problems. There was the compulsion to cut down the development budget to ensure security in the country. The September 11, attack in the US and the subsequent threat of terrorism had slowed down the global economy. This had a several impact on Nepal as well, mostly in tourism sector. No major physical infrastructure could be added due to insecurity.

The tenth five year plan (2002 – 2007) was also below the satisfactory level. The escalation of conflict, sharp deterioration of security situation, lower growth of private sector investment, hindrance in supply of goods due to the strikes, a low level of capital expenditure were some causes of below performance.

After completion of the tenth five year plan, government has launched a three year interim plan (2007 -2010) to support the political changes, to give continuity to previous achievements, and to address issues specific to the transitional period in post-conflict situation. This plan puts special emphasis on increasing public expenditure to assist relief and generate employment as well as on peace building, reconstruction, rehabilitation, reintegration, inclusion and revitalization of the economy.

1.2 Role of Management Accounting

A business enterprise, today, operates in dynamic and complex environment, which involves many new forms of management problems. Management has to carry out its basic function of profit maximization and cost minimization in an atmosphere of uncertainty. Due to the complex environment, the old techniques of management by inspection are no longer considered dependable in a situation in which the modern management has realized that even slight error in policy decision may mean either losing a lot of business opportunities or going out of competition. A second chance may not come or even if it does, it may be costly or risky. It, therefore, constantly staves to reduce the risk of mistakes in decision-making by keeping abreast of such quantitative information, which would help analyze its administrative action in order to reach judicious decision. Management, therefore, constantly staves to reduce

the risk of making mistakes by looking for and analyzing relevant information by means of which it hope to take judicious decision and direct the administration in an efficient manner (Kul Shrestha, 1997:1)

Managerial accounting concept emerged because of the complexity that exists in today's business decision making process. Its main theme is to simplify the planning and decision-making process and to provide support to achieve better organizational outcomes. It is important for every level of management because every manager has to be involved in some sort of decision-making process.

It was realized that management accounting techniques is helpful not only to commercial institutions, business houses, but also it has much to offer to the civil service administration in terms of controlling cost, forecasting expenses and helping to increase the overall productivity. It was not only in the commercial side of civil services that management accounting was needed but also in the non-commercial part of the civil service administration. The role of accounting has changed to reflect prioritization in government expenses. Hence, the zero-based budgeting has been adopting which is nothing more than management by objectives (MBO) through financial management. Thus, as intelligence arm, the role of accounting in the government has been to provide a base for the allocation of funds, measurement of achievements and prioritization of expenses.

Management Accounting would make its greatest contribution by helping management of business concern to set out civilization on a high economic level by maintaining control over multifarious and complex activities. This may not be true because the accounting is at the elbow of management in the role of servitor. It is because, it has assumed the role of alter ego through the processes and techniques of management accounting properly applied, management are not merely informed. It is estimated for action. Thus, management accounting has to be regarded as an integral part of personality of management (Gupta, 1995:8-9).

1.3 Industry

It is not possible to expand economic activities only thorough the existing agro-based economic structure therefore, there is a need to enhance the industrial sectors of the economy. Development of the industrial sector, among other sectors, is equally essential for the rapid economic development of the country. Despite the determinant role of the industrial sector development in resolving issues of growing unemployment and rural poverty, the share of productive industry sector in Nepal's GDP is only in the range of 10 percent. Given that the majority of the population is dependent on agriculture, the need to create job options for them

in non agriculture sector through the development of productive industries is imminent. This will not only help to resolve the problems of unemployment but also stimulate the process of economic development of the country. As the efforts of government alone are not enough for this to happen, the active role of the private sector is indispensable in promoting domestic and foreign industrial investment. Hence, Nepal government has assumed the role of promoter and partner to support the efforts of the private sector in development of national economy. In addition, government, as part of this strategy, is concentrating its resources to develop basic infrastructure like transport, power supply, and communication to build the least cost effective structure of the economy for the promotion of the industries.

1.3.1 Introduction of Balaju Industrial Estate

Balaju Industrial Estate was established with the joint effort of Nepal Government and American Government (USAID) in 2020 B. S. for the economic development of nation through industrialization. It is situated at Balaju, Kathmandu Metropolitan City, Ward No. 16 with area of 670 Ropanis. It is the oldest industrial Estate among 11 industrial estates.

In the very beginning, this estate was managed by Nepal Industrial Development Corporation (NIDC) and Later on, a development committee named Industrial Service Center (ISC) had provided its services. Since 1st Shrawan 2045, the estate has been managed by Industrial District Management Limited (IDML).

The estatet has been providing physical infrastructure (Developed land, Building, Electricity, water, Road, Drainage) and other amenities such as banking, hospitality, postal, warehouses, day child care, sports hall etc.

At present, in this estate, 75 industries are in operation, 25 are in under construction and 13 are closed. There are 8 other government and service providing organization, functioning their work in this estate.

The Major products producing by these industries are soft drinks, noodles, wheat floor, biscuits, soap and chemicals, wooden furniture, milk and milk products, ice cream, construction materials, ready made garments, textiles, woolen yarn, woolen carpet, handicrafts, rubber, plastic and plastic wares, metal utensils, herbal medicine, film production etc.

1.3.2 Balaju Industrial Estate: A bird's eye view.

Establishment	: 19th Jestha 2020
Area (in ropani)	:670
Buildings (Nos.)	:93
Industrial	: 45
Warehouse	: 21
Office and others	: 27
Investment (Rs.in millions)	
IDML	: 22.8
Private sector	: 2050
Employed People	
Men	: 2205
Women	: 337
Administrative office	: 42
Electricity Capacity	: 4000 K.V.A.
H. T. Line	: 2 Km
L. T. Line	: 7 Km
Water Supply (capacity per hour)	: 30,000 Liter
Reserve Capacity	: 104,000 Gallon
Road Statistics	
Black Topped	: 5.236 Km
Gravel	: 0.366 Km
Surface Drainage	: 1.85 Km
Industries (Nos.)	: 110
Operating	: 75
Under Construction	: 25
Closed	: 10
Tariff and Charges:	
Entrance Tariff (Land)	: Rs. 10000 per Ropani (one time)
Entrance Tariff (Building)	: Rs. 6 per sq. ft. (one time)
Rent:	
Land Rent	: Rs. 5068.63 per Ropani per Year
Building Rent	: Rs. 3.37 per sq. ft. per Month
Warehouse Rent	: Rs. 4.52 per sq. ft. per Month
Electricity bill	: As per Electricity Authority rule
Water bill	: As per Water Supply Corp. rule

1.3.3 Institutions Involved in Promoting Industrial Estates Development.

Industrial District Management Limited (IDML) is the only institution registered under the Company Act for the promotion of industrial estates in Nepal. It provides all the facilities to the industries established within the industrial estates.

The department of Cottage and Small Industries is the main body involved in the development and promotion of cottage and small- scale industries. The department also provides skill development and entrepreneurship training to the people. The ministry and department of industry are responsible for the promotion and development of medium and large scale industries. Similarly Federation of Nepal Chambers, commerce and industry (FNCCI), Chamber of Commerce, different commercial and joint venture banks, Agriculture Development Bank and other financial institutions are involved in the promotion of industries.

1.4 Statement of the Problem

Success is not a matter of chance. Profit does not just happen. It is to be planed and managed. Management Accounting provides various tools and techniques to aid management functions in an efficient manner. Poor performance is the outcome of poor planning controlling and decision-making. Yet, a question is raised; do the Nepalese industries practice management accounting tools and techniques to carry-out planning, controlling & decision-making functions? To find the correct answer of this question hereby it is proposed to conduct a research. The proposed research questions to be asked will help to study the scenario of management accounting tools being used in Nepalese industries.

This proposed thesis report would focus on the given queries of subject matter:

How far the Nepalese industries are practicing management accounting tools?

1. Which management accounting tools are mostly practiced and which are not practiced till now?
2. What are the major difficulties in the application and implementation of management accounting tools?
3. In which areas of industry can management accounting tools be applied to improve the competitiveness?

1.5 Objectives of the Study

The main objective of this proposed research is to examine and study the practice of management accounting tools in the selected industries of Balaju Industrial Estate. The specific objectives are;

1. To Study and analyze the present practice of management accounting tools in the selected industries of Balaju Industrial Estate.
2. To identify the areas where management accounting tools can be extensively applied to strengthen the industries activities.
3. To make necessary recommendation to overcome the difficulties in applying management accounting tools in Nepalese industry.

1.6 Hypothesis

Thirteen Management Accounting tools are used as parameters. These are 1) Capital budgeting 2) Cost segregation 3) Tax effect 4) Standard costing 5) Break Even Analysis (BEP) 6) Financial Statement analysis 7) Master budgeting 8) Flexible budgeting 9) Responsibility Accounting 10) Activity Based Costing (ABC) 11) Cash Flow Statement 12) Zero Based Budgeting (ZBB) 13) Lease or Buy. The sample industries were asked whether they were practicing these tools or not, then they were evaluated irrespective of their importance.

Null hypothesis (Ho):-The Industries are practicing more than the average number of Management Accounting Tools as their management practice.

Alternative hypothesis (H_1):- The Industries are practicing less than the average number of accounting tools.

For the testing of other hypothesis, the sample Industries is grouped into Public Limited Company and Private Limited Company.

Hypothesis for testing of Standard Costing Analysis

Null hypothesis (Ho):- There is no significant difference between Public Limited Companies and Private Limited Companies in practice of Standard Costing Analysis

Alternative hypothesis (H_1):-There is significant difference between Public Limited Companies and Private Limited Companies in practice of Standard Costing Analysis

Hypothesis for testing of Activity Based Costing (ABC)

Null hypothesis (Ho):- There is no significant difference between Public Limited Companies and Private Limited Companies in practice of Activity Based Costing (ABC)

Alternative hypothesis (H_1):-There is significant difference between Public Limited Companies and Private Limited Companies in practice of Activity Based Costing (ABC).

1.7 Significance of the Study

This proposed research work will be focused on the study of the practice of management accounting tools in the selected Industries. This study will be significant in the following ways:

1. It analyzes the management accounting tools used in Industrial Sector of Nepal.
2. It explores the problems and potentialities of Nepalese Industries. It will be useful to the potential investors, lenders, policy-makers, managers and stakeholders.
3. It provides information on the application of the tools under different circumstances and encourages the use of management accounting in decision-making.
4. It provides literature to the researcher who wants to carry on further research in this field.

1.8 Limitation of the Study

This proposed research has the following limitations;

1. The study will be concentrated on management accounting practice and does not consider the economic aspect of the Industry.
2. This study will be focused on the Nepalese Industry. Thus, the findings might not be applicable to other sectors,
3. The study will pay attention to the practice of management accounting tools only.
4. The research will be based on primary as well as secondary data.
5. The research will not concern with the human resource aspects of Nepalese Industry.

1.9 Organization of the Study

This proposed research thesis will be divided into five chapters. They are:

1) Introduction
2) Review of literature
3) Research methodology
4) Data presentation and analysis

5) Summary, Conclusion and Recommendations.

The introduction chapter will cover background of the study, role of management accounting, statement of the problem, research hypothesis, research objectives, and significance of the study, limitation of the study and organization of the study.

The second chapter will focus on review of literature. It will contain the conceptual framework and past research literature review on profit planning and control area of management accounting.

The Third chapter will deal with the research methodology to be adopted for the study consisting of research design, source of data, data collection procedure, population and sample, research variables and data processing procedure.

The forth chapter will deal with presentation, analysis and interpretation of data. It consists of testing of hypothesis, analysis of questionnaires, and analysis of open-end option and major findings of the research.
The last chapter will cover summary, conclusion and recommendation.

CHAPTER-II

Literature Review

The modern industrial or service firm must conduct its business in a rapidly changing and highly competitive environment. An advantage is placed on the ability to react quickly and constantly changing market conditions. Management must be concerned with all aspects of the firm's operations including production of goods and delivery of services, sales and marketing activities, and supporting functions, such as personnel training, data processing etc. To handle these responsibilities most firms make extensive use of financial data and reports. This has led to emergence of management accounting. The goal of management accounting is not to be an accountant; rather it aims to produce confident and capable managers. Management account provides information to management for planning, controlling and decision making. Past data is needed to evaluate present achievement and forecast future. Management accounting is a systematic way to access the needed information to internal users such as managers of different levels.

In ordinary language, any system of account which assists in carrying out its functions more efficiently may be termed as management accounting. (Munankarmi, 2003:1.05)

In the words of Goyal, "In ordinary language, the term 'managerial accounting' is used to describe the modern concept of account as a tool of management in contrast to the conventional annual or half-yearly account prepared mainly for information of proprietors, the object being to so expand the financial and statistical information as to shed light on all phases of the activities of organization."

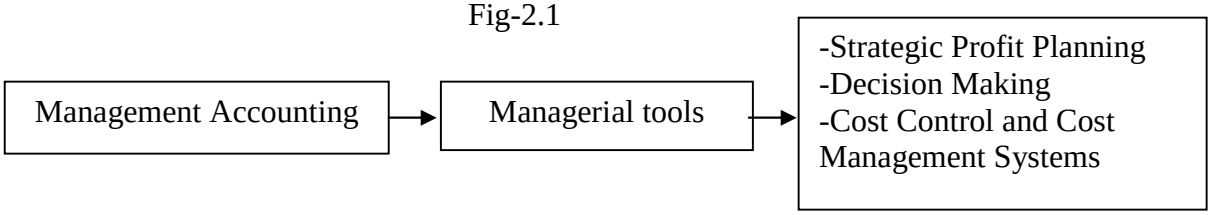
In the words of Batty, "Management accounting is the term used to describe the accounting methods, systems and techniques, which coupled with special knowledge and ability, assist management in minimizing losses. It is essentially the application of managerial principles and know-how to the planning development, execution and control of corporate plans."

In the words of Hilton, "Managerial Accounting is the process of identifying, measuring, analyzing, interpreting and communication information for searching the goals of the company. Managerial accounting is an integral part of the management process and managerial accountants are important strategic partners in the company's management team."

Managerial accounting is emerging and developing as a separate discipline. It is not confined to routine clerical work; rather it is a dynamic and challenging task. It is a management tools in the hand of manager. Management is getting things done through others. Planning, controlling and decision making are the important functions of management, which cannot be carried out in vacuum. Every activity should be based on facts, supported by data. Finally management accounting is processing data for effective decision making and controlling. It aims to simplify complicated decision making.

Management Accounting

Fig-2.1



Managerial accounting activities include collecting, classifying, processing, analyzing and reporting information to manager for effective management and long term planning. Managerial accounting emphasized two aspects;

- Presenting the accounting information in proper way before the management.
- Such accounting information being placed in such way as to assist management in its operation and functions. (Bajracharya, & et al, 2004:31).

Finally management accounting is a tool in the hand of management to lead their organization in this multi-faceted and dynamic world.

2.1 Review of Management Account Tools for Industrial Sector

Management accounting performs broad functions from collecting data to interpret the data for management. Various internal information (Capacity available, current capacity utilization, cost structure, past results etc) and external information (competitors' position, socio-political movements, market characteristics, globalization etc) are needed to procure and store. Management accounting is a system which collects, stores, retrieves, modifies, analyzes, interprets and provides concise information/data covering entire filed of business for the management. Thus management accounting helps management in planning, controlling and

decision making. Management accounting tools have wide application for all kind of manufacturing and trading, small and large business.

2.1.1Capital Budgeting

Capital budgeting is an important managerial tool. One duty of a financial manager is to choose investments with satisfactory cash flows and rates of return. Therefore, a financial manager must be able to decide whether an investment is worth undertaking and be able to choose intelligently between two or more alternatives. To do this, a sound procedure to evaluate, compare, and select projects is needed. This procedure is called capital budgeting. Capital budgeting is investment decision-making as to whether a project is worth undertaking or not. Capital budgeting is basically concerned with the justification of capital expenditures. It may be decision regarding replacement, expansion diversification etc. Characteristics of capital budgeting is as follows

- Long term investment
- Bulk amount of investment
- Effect of time value of money
- Risk and uncertainty

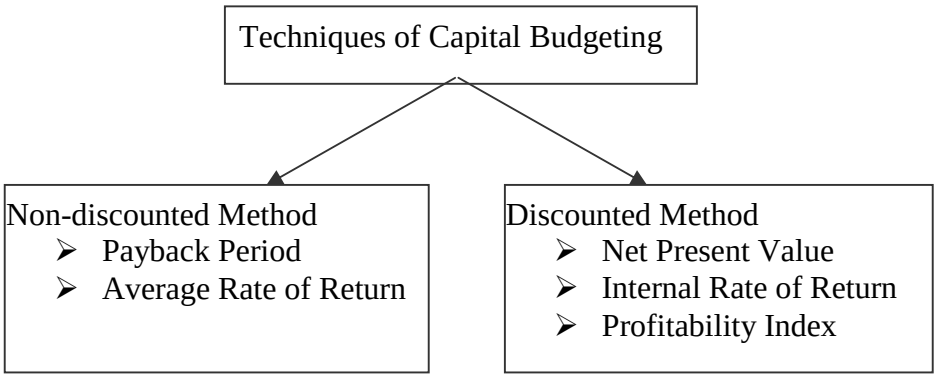
In the word of Khan and Jain, "Capital budgeting is of paramount importance as a framework of future development, and as major determinant of efficiency and competitive of power of a firm. It relates to fixed or long term assets, which are defined as assets that are in operation and yield returns over a period of time. It, therefore, involves a current outlay in return for a series of anticipated future benefits."

Procedure of Capital budgeting are

- Estimating the project's net cash flows
- Measurement of benefit of the investment
- Evaluation of risk associated with the investment

There are various techniques of capital budgeting. These techniques can be categorized into two category viz, non-discounted and discounted method.

Fig-2.2



2.1.1.1 Non discounted Cash Flow Method

This is unsophisticated and traditional method. These techniques do not consider the time value of money while evaluating the projects. Payback period (PBP) and Average rate of return (ARR) fall under this category.

2.1.1.1.1 Payback Period (PBP)

The payback period is the number of year required to recover the initial investment. It does not consider the inflows after the payback period. The projects having short payback period are desirable.

In case of even cash flows

$$\text{Payback period} = \frac{\text{Initial Outlay}}{\text{Constant annual cash flows}}$$

In case of uneven cash flows

$$\text{Payback period} = \text{Minimum Year} + \frac{\text{Amount to be recovered}}{\text{Cash flow during the year}}$$

Where Amount to be recovered = Investment –minimum year's cumulative cash flow

Advantages of Payback period

- Use of Cash flow
- Easy to calculate and understand
- Emphasizes liquidity

Disadvantages of Payback period

- Ignore the time value of money
- Ignores cash flows occurring after the pay pack period
- Not a measure of profitability

2.1.1.1.2 Average rate of return (ARR)

It is also called the accounting rate of return. It is based on the average rate of return after tax over initial outlay. Higher rate of return is preferable. It is computed as follows:

$$\text{Accounting Rate of Return} = \frac{\text{Average net income after tax}}{\text{Initial outlay}}$$

If ARR is more than minimum acceptable rate of return the investment decision is done. Otherwise the project is rejected. ARR doesn't consider the timing of the cash flows and time value of money. So it may give unsatisfactory internal rate of return. That's why it is not used so frequently.

Advantage of Average Rate of Return

- It is simple to understand and use
- It can be easily calculated with the help of accounting data
- It uses the entire streams of cash flows

Disadvantage of Average Rate of Return

- It uses only accounting profit
- It ignores the time value of money
- It ignores the length of projects lives
- It ignores reinvestment of the profit

2.1.1.2 Discounted Cash Flow Method

Unlike traditional method, discounted cash flow method considers the time value of money, so it is regarded as superior.

2.1.1.2.1 Net Present Value (NPV)

It is widely used method. It is present value of future returns discounted at the firm's cost of capital, minus the cost of investment. This method requires the determination of three items of for a project:

- Initial cash outflow
- Future net cash inflow and
- Minimum required rate of return

Mathematically,

$$NPV = \frac{CF_1}{(1+k)^2} + \frac{CF_2}{(1+k)^2} + ... + \frac{CF_n}{(1+k)^n} - I_0 = \sum_{t=1}^{n} \frac{CF_t}{(1+k)^t} - I_0$$

= (Present value of future cash flows)-Initial outlay

= ($PVIFA_{k\%, n}$)-NCO

Decision

If NPV is positive (NPV>0) the projected should be accepted. In case of mutually exclusive projects higher NPV is preferable.

Advantages

- Use of cash flow
- Considers the time value of money
- Consistent with goal of shareholder wealth maximization

Disadvantages

- Sensitive to discount rates
- Complicated

2.1.1.2.2 Profitability Index (PI)

Profitability index is also called benefit-cost ratio. It is the ratio of the present value of the future cash flows to initial outlay.

$$\text{Profitability Index} = \frac{\text{Present Value of the Cash Inflow (TPV)}}{\text{Present Value of Cash Outflow (NCO)}}$$

Under this method projects having profitability index greater than one (PI>1) is selected. The more the index the more it will be beneficial.

Advantages of Profitability Index

- Uses cash flows
- Recognizes the time value
- Consistent with the firm's goal of shareholder wealth maximization

Disadvantages of Profitability Index

- Not easy to determine discount rate
- Ranking may be different with different discount rate

2.1.1.2.3 Internal Rate of Return (IRR)

The internal rate of return is usually the rate of return that a project earns. It is defined as the discount rate, which equates the aggregate Present Value (PV) of the net cash in flows (CFAT) with aggregate Present Value of the cash out flows of a project. In other words, it is that rate which gives the project net present value zero. The internal rate of return is determined on the basis of trial and error.

For Trial and Error method

PV inflows = PV investment costs

$$\frac{CF_1}{(1+IRR)^1}+\frac{CF_2}{(1+IRR)^2}+\frac{CF_3}{(1+IRR)^3}+.....\frac{CF_n}{(1+IRR)^n}-I_0=0$$

Or,

$$\sum_{t=1}^{n}\frac{CF_t}{(1+IRR)^t}-I_0=0$$

The project having IRR greater than required rate of return is preferable. In case of mutually exclusive projects the project with higher IRR should be accepted.

Advantage of Internal Rate of Return

- Use of cash flow
- Recognized the time value
- Consistent with the firm's goal of shareholder wealth maximization

Disadvantages of Internal Rate of Return

- Possibility of multiple IRRs
- Can involve tedious calculations

2.1.2 Cost Segregation into Fixed and Variable

Cost means monetary measure of the sources sacrificed/foregone for a particular purpose. In other word payment of money/money worth to get something is the cost. "Different cost for different purposes", in organization there may be various types of cost. These costs should be accumulated and classified, analyzed and grouped and controlled. So that the total cost and unit cost can easily be determined. Beside this, cost should be controlled which need behaviour identification. It helps to conduct special analysis for planning controlling and decision making

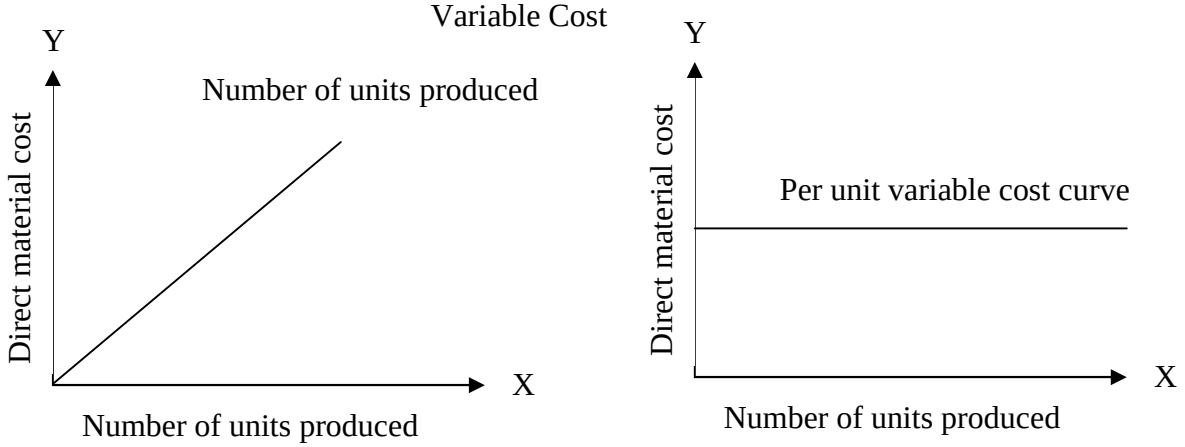
On the basis of behaviour cost can be categorized into the three categories, namely:-
1) Variable cost 2) Fixed cost and 3) Step variable cost 4) Se

1) Variable Cost

In the words of Hongren, Foster & Datar, "Variable cost are the costs that tend to vary in direct proportion and same direction to change in production activity, sales activities or same other measures of volume/cost driver. The costs of these inputs increase/decrease in proportion to increase/decrease in volume or cost driver."

Fig-2.3

Variable Cost

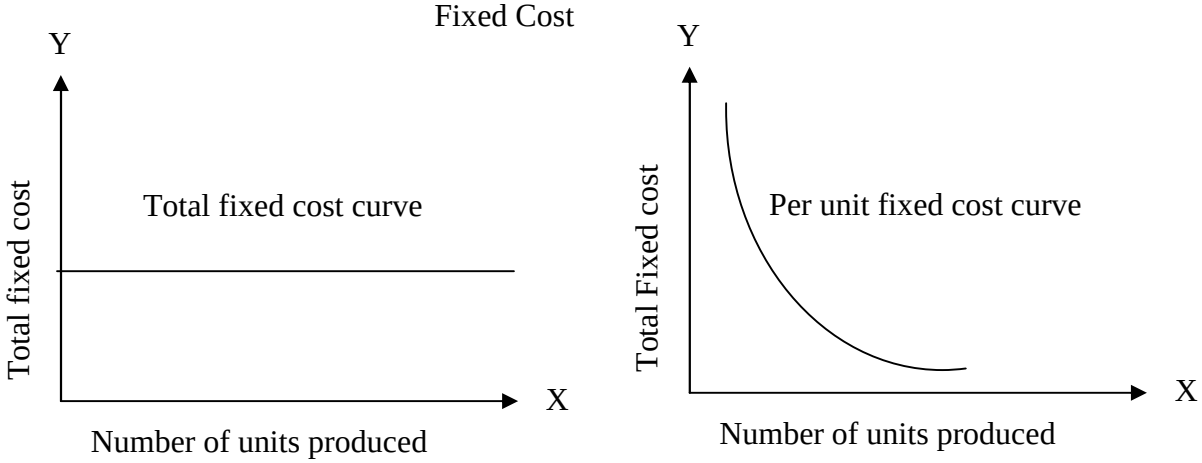


Such type of cost increases as the production/activity increase and decreases when production/activity volume is decreased in same proportion and direction. But per unit cost will be fixed as shown in the figure. Direct material/ spare parts in workshop, commission of sales are few examples of variable costs. The consumption of engine related spares increase with increase in engine overhauled (activity). So this is the variable cost.

2) Fixed Cost

If any cost remains constant in total at any activity level of activity within the relevant range, it is called fixed cost. It does not show affinity with activity level, as time passes these cost are accrued. Like administrative expenses, salary, interest etc, whatever is the sales volume it would be constant.

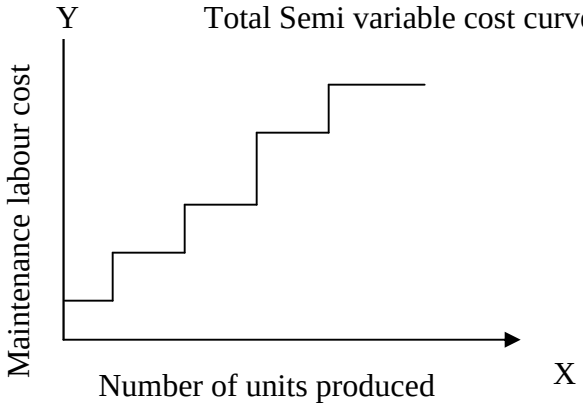
Fig-2.4
Fixed Cost



The figure shows that the total fixed cost will be constant irrespective of activity level and fixed cost per unit will decrease with increase in level of activities.

3) Step Variable cost

Fig-2.5

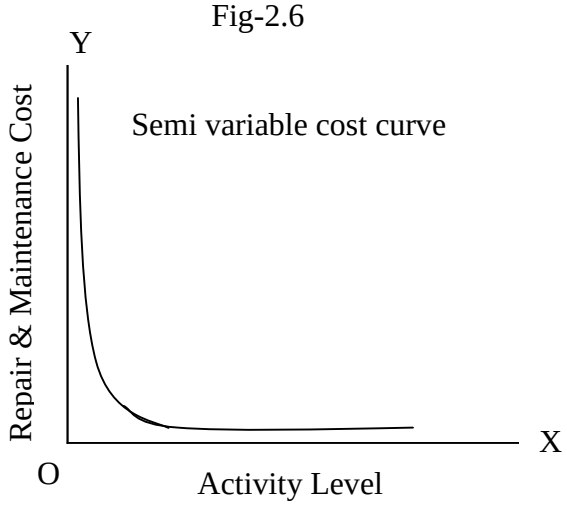


It will be constant to certain level of activity then will changed and again will be constant and so on as shown in figure. Indirect labour cost can be taken as the example of step fixed cost. It is also called moving fixed cost.

4) Semi-variable Cost

It is also known as mixed cost as it is hybrid cost consisting of both variable and fixed cost. So, neither it is perfectly variable nor absolutely fixed with respects to volume of activities. It is not fixed in both total and per unit, like repair and maintenance cost.

Fig-2.6



Such type of cost should be separated into variable and fixed cost for various decision making purpose. It helps in pricing, flexible budget making, cost-volume profit (CVP) analysis, alternative decision making. Cost estimation and segregation plays important role in

planning and decision making. The term 'cost' plays vital role not only in cost accounting rather it is equally important in planning and decision making. Estimating, control and cost management is base for making profit. It has wide application, of them some are:

- Product cost determination
- Cost volume profit analysis
- Budgeting
- Cost control
- Price determination
- Bidding for contracts and special offer
- Make or buy decision
- Further processing decision

Methods for cost segregation are as follows:

2.1.2.1 High and low method

In this non sophisticated method, difference in cost of two activity level (high and low) with in relevant range is taken into consideration. In the words of Jain and Narang, "As the name suggest, this method considers two levels of activity to split cost. It considers the out put at different levels i.e. high or low point is compared with the amount of expenses incurred at these different periods." These data is taken from old records of organization.

$$\text{Variable cost per unit (VCPU)} = \frac{\text{Cost at higher level} - \text{Cost at the lowest level}}{\text{Output at highest level-Output at the lowest level}}$$

Fixed cost per period = Total cost – (VCPU X output)

Y = FC + VCPU X Units
Where, Y = mixed cost
FC = fixed cost, and
VCPU = unit variable cost

This Method is Simple to use. However as it considers only two points, it may lead wrong conclusion. Only two points are not enough to define the complete cost behaviour.

2.1.2.2 Regression Analysis/Least square methods

This method assumes linear relationship between dependent and independent variables. Costs depend on level of activities. As level of activities increases cost also increases. Regression analysis further assumes the magnitude of change is same. It provides best-fitting straight line eliminating judgmental estimate at all. It is a statistical method. It determines regression by minimizing the sum of the squares of the vertical distances between the actual Y values and the predicted values of Y.

$$Y=a+bX$$

Slope of the regression line: $b = \frac{n(\sum XY) - (\sum X)(\sum Y)}{n(\sum X^2) - (\sum X)^2}$

Y-axis intercepts: $a = \frac{\sum Y}{n} - b\frac{\sum X}{n}$

Where,

X is a value of the independent variable

Y is a value the dependent variable

N is the number of items in the sample

$\sum X$ is the X variable summed

$\sum Y$ is the Y variable summed

$\sum X^2$ is the X variable squared and the squares summed

$(\sum X)^2$ is the X variable summed and the sum squared

$\sum Y^2$ is the Y variable squared and the squares summed

$(\sum Y)^2$ is the Y variable summed and the sum squared

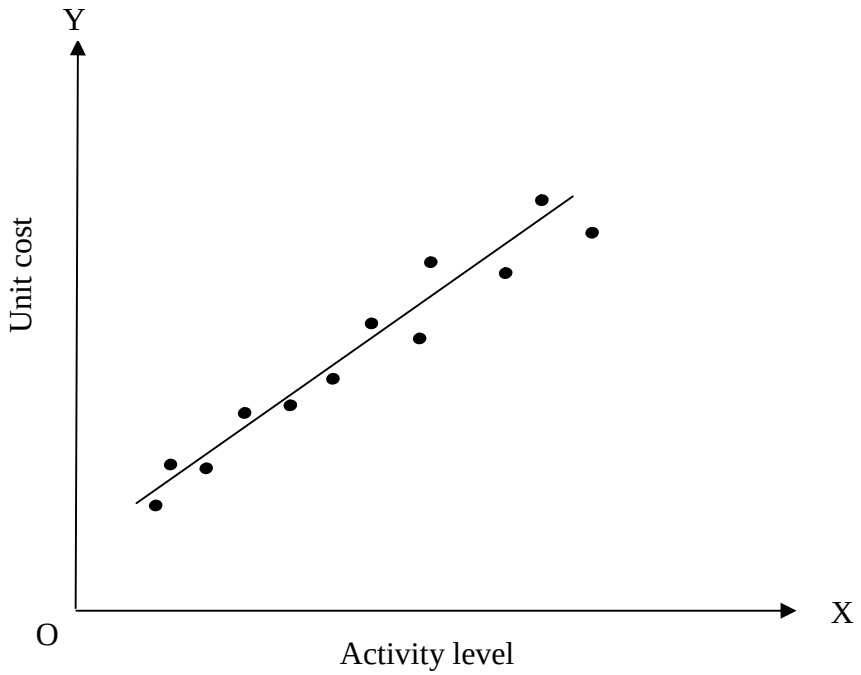
$\sum XY$ is the sum of the products of X and Y

It is more accurate than high low point method. It reduces the error. But it is complicated and time consuming. The reliability depends on the degree to which the independent variable (activity measure) can explain the change in the dependent variable.

2.1.2.3 Graphical method/Visual fit method

Fig-2.7

Graphical Method



The figure shows graphical method of cost segregation. This is a simple method which uses scatter diagram. Costs of different activities are plotted then line is drawn in judgmental basis. It's subjective and results may be different with different people and estimates.

2.1.2.4 Average Method

In this method simple average is done to segregate variable and fixed cost. Although it is a quite simple method, it does not give accurate results. So it is rarely used.

2.1.2.5 Accounting estimate method

It is also a kind of judgmental method. Department manager and accounting personnel analyze each item of cost ledger and segregate them into variable and fixed cost. To segregate the mix cost, they will arrive at certain agreed percentage, which will best describe the cost behaviour judgmentally.

2.1.2.6 Engineering Method

It is the new and sophisticated method, detailed analysis of work methods are done. Standard input and standard costs are determined, time and motion study is carried out then cost behaviour is found out. With detailed study cost pattern for various activity level are determined. It is highly accurate method but time consuming and expensive.

2.1.3. Tax effect Analysis

In the words of Seligman tax is "compulsory contribution from a person to the government to defray expense incurred in the common interest of all without reference to special benefit conferred." In simple language tax is a liability to pay an amount to the state. This tax is unavoidable contribution to government. Tax plays crucial role in planning and decision making. So it should be planned and managed properly. Tax planning is done to minimize tax burden and maximize the profit. Managers have to consider tax factor while planning business activity.

For the purpose of enhancing the investment environment in a country, the government provides different types of facilities to the business organizations. Such facilities include reduction in tax rate, providing tax holiday, investment allowance, depreciation facility etc. tax planning means the use of all these facilities given by the government to reduce the tax liability. (Kandel, 2003:151)

Tax planning is scientific, economic, legal and ethical planning activity to use various incentives concessions allowance, rebate etc. It has wide scope, the relevant aspects are:

Long term

- Selection
- of business
- Selection of product
- Selection of location
- Selection of sources of capital
- Size of business

Short tem

- Acquisition of Fixed assets
- Repair and maintenance
- Pollution Control Cost (PCC)
- Research and Development (R & D)
- Stock Valuation
- Lease or buy

Analysis of tax effect provides various benefits for organization they can be summarized as follows

- Saves tax and increases profitability
- Avoids unnecessary worries, tensions and administrative hassles
- Helps in analysis of risk
- Enhance competitive abilities etc.

2.1.4 Standard Costing

It is management accounting tool for management control. Control is an important function of management. With control, objective of organization can not be achieved. For control actual performance should be compared with predetermined costs/level of performance. Then deviation should be found out and corrective action should be taken on time.

Standard cost for a given job is the predetermined cost to complete the job as per specifications. Standard costing is a system before starting the production and then comparing this with the actual costs of the job after completing the production. The difference between the predetermined or standard costs and the actual costs is termed 'the variance.' (Bajracharya & et al, 2004:495)

Application of standard costing

- Budgeting :

Budgeting is numerical expression of action. The budget is prepared with detailed analysis of every activity. Direct labour, direct material and manufacturing expenses are the main components of budget. To set budget standard costing provides bases.

- Economic Decision

Standard costing provides appropriate standard for each activity, which helps in making decision regarding special offer, further processing etc.

- Pricing Decision

Standard costing gives data about these products. Actual outcomes are compared with estimated so it helps in fixing prices for their product

- Cost control

To control is compare the actual output with standard one, find deviation and take corrective action promptly. Standard costing measures the deviation, search the reasons and take corrective action to keep the outcome within acceptable limit.

2.1.5 Break Even Analysis/Cost Volume Profit Analysis

Cost volume profit is a supplementary tool of profit planning, which studies revenue/cost with respect to the sales. In the words of Drury, "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 these relationship cost volume analyzes, simplifies the real world conditions that a firm will face. First of all 'no loss no profit' situation is found then, on the basis of the corner stone further profit planning is done. CVP analysis studies important variable such as selling price, sales volume, expense and tax. These variables have unique relation for different organization. Cost volume profit analysis is an accounting technique showing the relationship between these variables. Cost volume profit analysis is in immensely helpful for developing alternative strategies in sales planning and the cost estimation

Since, fixed cost remain constant within relevant range, the fixed cost curve is parallel to 'OX' axis. Variable costs slope upward form the origin to right but the slope depends on variable cost ratio.

In this figure, 'OX' axis measures the units where as 'OY' axis measures revenue cost and profit. Here,

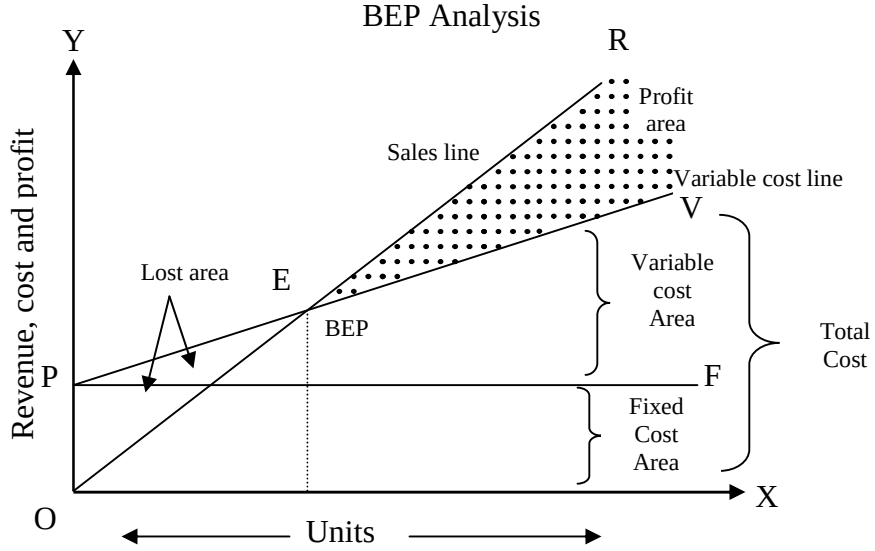
PF is the total fixed cost curve

PV is the total variable cost curve

And OR is the total revenue curve

Fig-2.8

BEP Analysis



Here, the revenue curve intersects the total cost curve point E. this point is called break even point. At this point, the total revenue equals the total cost. The graph states that if the company can reach the point of the BEP it can generate sufficient revenues to cover all of its operating expenses.

Approaches to CVP and BEP

The cost-volume profit relationships and the break-even point can be analyzed through different approaches. Mainly, the break-even-point and other required cost-volume profit relationships could be explained through different methods.

1) Variable Income Statement Method
2) Contribution Margin Method
3) Mathematical Formula Method
4) Graphical Method

1) Variable Income Statement Method

	Sales in Unit		XXX
	Sales Revenue	XXX	
Less:-	Variable Cost of Goods Sold	XXX	
	Contribution Margin		XXX
Less:-	Fixed Cost		XXX
	Net Income before Tax		XXX

2) Contribution Margin Method

Contribution Margin reflects the revenue remaining after covering all variable costs. Contribution Margin is the excess of sales revenue over variable costs. So, contribution margin means how much is left from sales revenue, after covering variable expenses that are contributed toward the covering of fixed expenses and then toward profit for the period.

Total Contribution Margin = Total Sales Revenue – Total Variable Cost

CMPU = SPPU – VCPU

Contribution Margin Ratio is equal to contribution margin divided by revenue. It can be calculated by using either per unit or total revenue minus total variable cost information as follows:

$$\text{Sales revenue} = \frac{\text{Sales Revenue-Variable cost}}{\text{Sales revenue}}$$

$$\text{C/M ratio} = \frac{\text{SPPU-VCPU}}{\text{SPPU}}$$

$$\text{C/M ratio} = 1 - \frac{\text{Variable cost}}{\text{Sales revenue}}$$

Using this contribution margin, the sales volume for the desired profit can be ascertained.
If requirement is certain profit, the following formula can ascertain the required sales volume

$$\text{Required sales in unit for desired profit} = \frac{\text{Fixed cost + Desired profit}}{\text{Contribution margin per unit}}$$

If requirement is to compute the sales volume in rupees, following formula is applied:

$$\text{Required sales in Rs. for desired profit} = \frac{\text{Fixed cost + Desired profit}}{\text{CM ratio}}$$

Again, if requirement is to find out the sales volume for certain level of profit after deducting tax amount, the formula can be expressed as

$$\text{Required sales in Rs. for desired profit} = \frac{\text{Fixed cost} + \frac{\text{Desired profit}}{\text{1-Tax}}}{\text{Contribution margin per unit}}$$

Again, formula for the required sales in rupees for the desired profit after tax can expressed as

$$\text{Required sales in Rs. for desired profit} = \frac{\text{Fixed cost} + \frac{\text{Desired profit}}{\text{1-Tax}}}{\text{CM ratio}}$$

3) Mathematical Formula Method

This is the most widely practiced approach to the breakeven point and cost volume profit analysis. The formula uses an algebraic equation to calculate the break-even point.

$$\text{Sales Volume} = \text{FC} + \text{VC} \pm \text{Profit}$$

Where, FC = Total Fixed Cost,

VC =Total Variable Cost

This equation can also be presented in the form of

$$SPPU \times Q = FC + VCPU \times Q \pm Profit$$

Where, SPPU = Selling Price per Unit

VCPU = Variable Cost per Unit

Q = Quantity (Sales Unit)

For the Break Even Sales Volume

$$BE\ Sales\ Volume = FC + VC \pm O$$

$$BEP\ (units) = \frac{Fixed\ cost}{CMPU}$$

$$BEP\ (Rs) = \frac{Fixed\ cost}{CM\ ratio}$$

4) Graphical Method

A break even chart is used to graphically depict the relationships among revenues, variable costs, fixed costs, and profit (or losses). The no profit/no loss point (the break even point) is located at the point where the total cost and total revenue lines cross. Below this point, the firm incurs losses and above this point, the firm earns profit.

2.1.6 Ratio analysis/Financial Statement Analysis

Simply Ratio means an expression of quantitative relationship between two numbers. This ratio gives more than quantitative information if they are properly interpreted. Ratio analysis is a widely used technique to evaluate the financial position and performance of a business. The term ratio refers to the numerical or quantitative relationship between two variables. It gives a meaningful technique of measuring and evaluating financial performance of a business with relevant industry firm average or specific standards such as past ratio of the same firm. It is a powerful tool of financial analysis. For the purpose of ratio analysis following two types of tools are used

a) Trend Analysis

It is comparison of present ratio with past and future ratio of the company.

b) Comparison with Others

It is comparison of ratio of firm with those of similar firms or with industry average at the same point in time.

The objectives of ratios analysis are as follows:

1. The main objective of ratio analysis is to analyze the firm's relative strength and weakness.
2. It evaluates the financial condition and performance of the firm.
3. It paves way for useful interpretation of financial statements.
4. It helps in suggesting corrective measures for the betterment of the firm.

Advantages of the Ratio Analysis

The importance of ratio analysis is the fact that it presents facts on a comparative basis. The following are some of the advantages of ratio analysis:

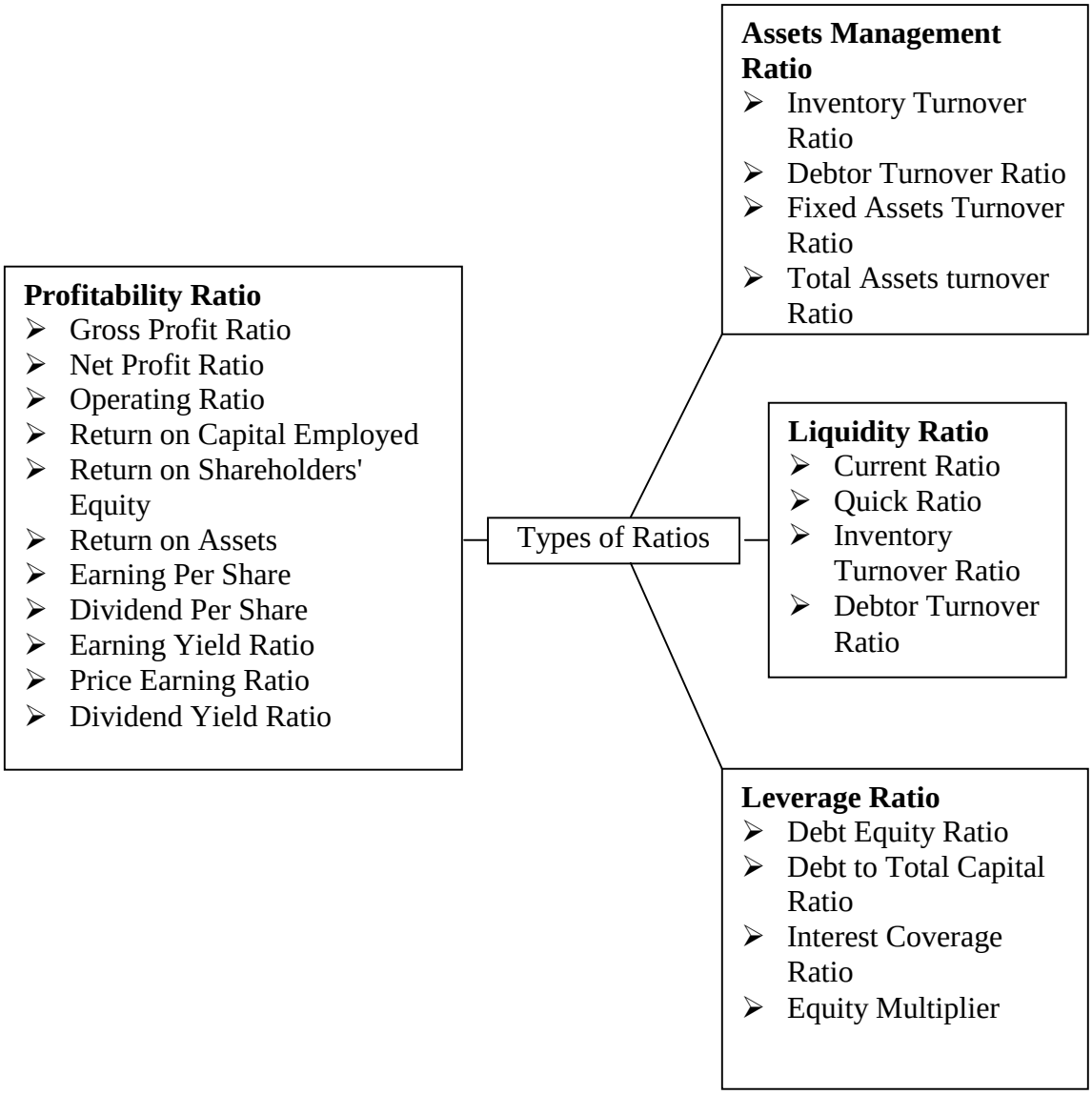
1. Ratio analysis provides an integrated view of the overall profitability of the firm, which the management constantly concerned.
2. It enables to analyze the ability of the firm to meet its short term as well as long term obligations.
3. Helps in planning, forecasting the performance of the firm over a period of time. When the ratios are compared, it indicates success or failure in future.
4. Facilitates for inter-firm comparison. A inter firm comparison would demonstrate the firms position vis-à-vis its competitors. If the results are at variance either with the industry standard or with those of the competitors, the firm can seek to identify the probable reasons or in that light, take remedial measures.
5. Facilitates trend analysis. The advantages of trend analysis of ratios, lies in the fact the analyst can know the direction of movement that is whether the movement is favorable, or unfavorable, when compared over the years.
6. Another dimension of the usefulness of ratio analysis is from the view point of the management. It imparts light on the degree of efficiency in the management and utilization of its assets. The various activity ratios measure this kind of operational efficiency.

Types of Financial Ratios

There are various types of ratios that are used by/for different parties for different purposes. It can be calculated from the information given in the financial statements. Generally, ratios are calculated from the financial statements by the parties' such as creditors, investors, financial institutions and management of the firm to know their field of interest.

Several ratios calculated from the accounting data can be grouped into various classes according to financial activities or function to be evaluated.

Fig-2.9



Limitation of the Ratio Analysis

It is already mention that the ratio analysis is a widely used tool of financial analysis, however it suffers from various limitation. Some of them are as follow:

a) Difficulty in comparison

One serious limitation of ratio analysis arises out of difficulty associated with their comparisons to draw inferences. This may be due to following:

i. Difference in the basis of inventory valuation.
ii. Different depreciation method
iii. Estimated working life of Assets, particularly of plant and equipments.
iv. Treatment of extraordinary of income and expenditure and so on.

b) Impact of inflation

The second major limitation of the ratio analysis as a tool of financial analysis is associated with the price level change. This, in fact, is a weakness of the traditional financial statements, which are based on historical cost.

c) Conceptual diversity

The differences in the definitions of items in the balance and profit and loss statements make the interpretation of the ratios difficult.

d) Short-term changes

The ratios calculated at a point of time are less informative and defective as it suffers from short-term changes.

2.1.7 Master Budgeting

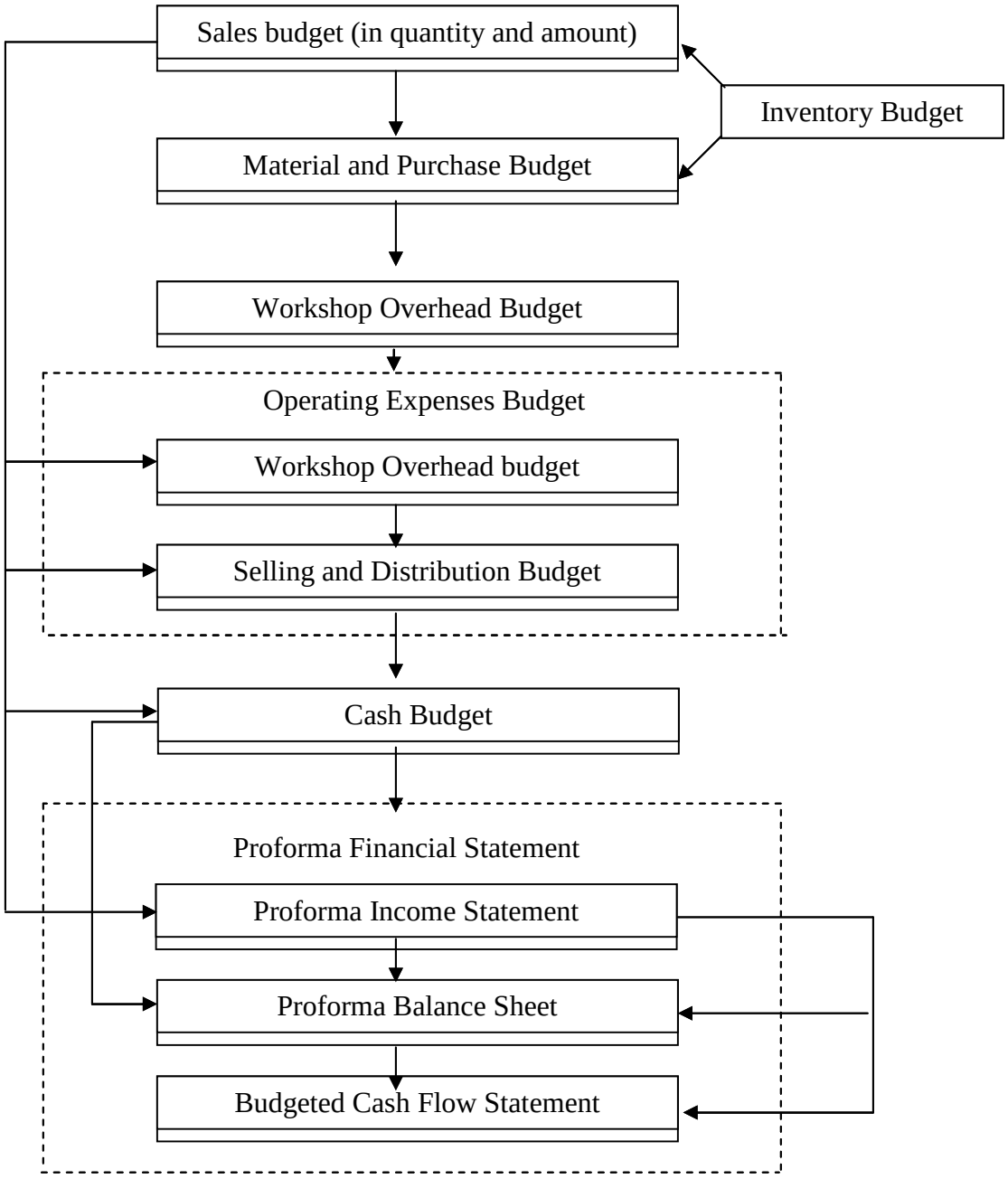
A budget is a numerically expressed course of action/target for definite period, which shows both revenues and expenditure. It may be prepared for an organization as a whole or for sub units. Budgeting shows management's desire to allocate scarce resources and priority for activity of future. The master budget is compilation of all functional budgets. It includes from sales budgeted to operational budget and financial statement.

The main aim of budgeting is to present the future forecasting, numerically expressed in advance of commencing operation, stating what and how things are done. It covers a definite period of time, usually one year. Budgeting is an artistic work as well, in which numerical plans are presented in well structured schedules. Budgets, basically forecasted

financial statements-formal expressions of managerial plans that encompass all phases of operations including sales, purchasing, manpower and financing. (Bajracharya & et. al, 2004:346)

Fig-2.10

Master Budgeting



2.1.7.1 Sales Budget

Sales budget is starting point. On the basis of this budget other budgets are developed. Sales budget is prepared both in units and amount. It is based on sales forecast, past sale trend, market situation and seasonal influences. These determinants should be analyzed properly to make realistic sales budget. Brand wise, segment wise, region wise budget is prepared on the basis of sales forecast. Sales forecasting can be done through past trend analysis, Zero based budgeting (ZBB), market survey, judgmental analysis etc.

2.1.7.2 Material and Purchase Budget

In case of trading business, merchandise budget is prepared instead of production budget. After preparation of sales budget, material and purchase budget is prepared on the basis of the sales forecast. Material purchase solely depends on sales budget. Increase in sale of a particular brand of car; indefinitely increase the sales of spares parts of and services for this particular brand. This budget shows detailed budget by product, department and time.

Purchase = Sales + Desired ending inventory level – Opening inventory level

Purchase policy should be set for effective management and control of material. Various things should be considered while purchasing is as follows:

Carrying cost

It includes cost of storage, rent lightening, store staffing, handling, auditing, recording etc.

Ordering cost

It includes all clerical and administrative cost of purchasing, accounting, transporting and receiving.

Lead time

It is time period arrive to ordered material

Reorder level

It is the reordering level, calculated considering minimum stock level, consumption rate etc.

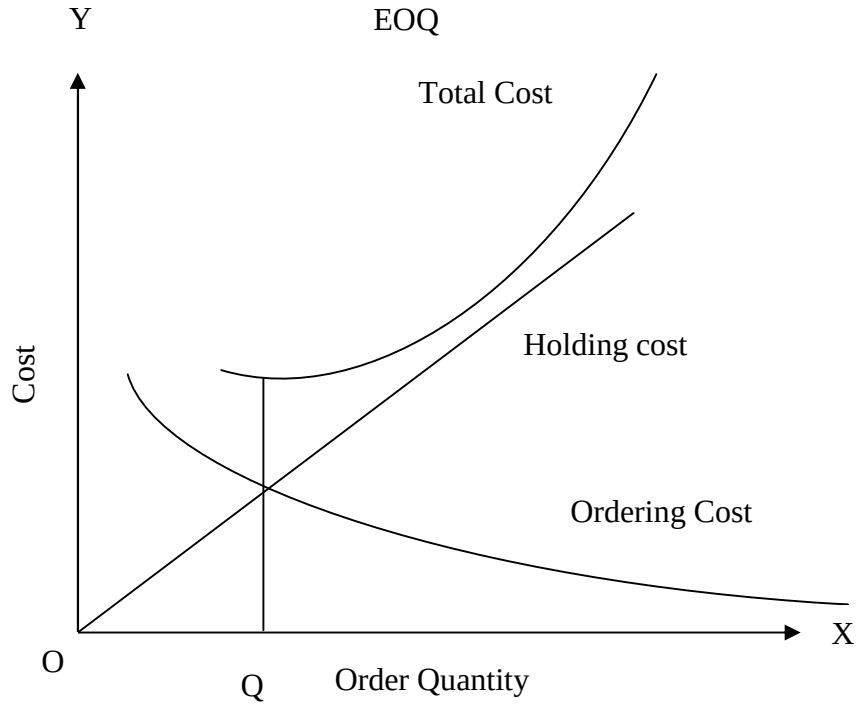
Reorder level = Minimum level + Consumption during lead time

= Safety stock + (lead time X daily consumption)

2.1.7.2.1 Economic order quantity (EOQ)

How much to purchase, when to purchase is main problem in procurement. Economic order quantity can help in this regard. It equates cost of acquisition and cost of possession. In order words it minimizes the total inventory cost.

Fig-2.11



$$EOQ = \sqrt{\frac{2AO}{C}}$$

A= Annual Requirement

O= Average cost of placing an order

C= Annual carrying cost of carrying one unit in inventory

Total Inventory Cost = Ordering Cost + Total carrying cost –Discount

= (O X A/Order size) + (C X Order size/2) – Discount

2.1.7.2.2 Just in Time (JIT) System

It is new emerging concept, to avoid loss and perfect control. In this philosophy purchase is made just when need. It is demand pull, Japanese philosophy of purchasing in

small lots with frequent deliveries. In this method purchase is entirely customer's demand driven. Thus it minimizes minimizing the wastage (like waste of waiting, transportation, stocks, motion, processing itself, making defective etc) and inventory holding cost. But perfect anticipation of need and reliable sources of supply is must. Reliable and geographically near supplier should able to supply on time with uniform quality. JIT system works with perfect employee participation, industrial engineering, continuing improvement, total quality control and small lot size.

Advantages of JIT system

- Reduces the amount of money tied up in inventories
- Reduces inventory holding cost
- Saves space as not required to maintain large inventories
- Makes possible to dictate quality problems timely
- Increases labour efficiency
- Minimizes the wastage

Limitation of JIT system

- Wrong estimation may lead the to misdirection
- Risk of not supplying on time
- Risk of not supplying quality materials
- Efficient inspection of supplies is needed

2.1.7.3 Operating Expenses Budget

This includes two budget, selling & distribution expenses budget and Administrative budget. Selling & distribution expenses budget includes cost related to selling, distribution and delivery of product to customer. Sales commission, carriage outward, advertising, insurance, executive salaries are the examples of such expenses. Administrative expenditures are fixed to a very large extent. Although such expenditures are not productive directly, it has crucial impact on organization's performance.

2.1.7.4 Cost of good sold budget

It determines the cost of product sold. It helps in preparation of profit loss account and balance sheet. Evaluation of ending inventory and fixation cost of goods sold are main purpose of this budget.

2.1.7.5 Cash Budget

This budget shows, opening cash, cash inflow/outflow and ending balance. It helps in determining the anticipated cash receipt and payment and thus cash surplus and deficit. In case of deficit, prompt arrangement can be done. In case of surplus, alternative use is preferred. Cash is critical aspect for each and every organization; it also measures the liquidity of organization. All the organization operates on money, not in profit so cash should be managed properly. Cash budget helps in effective cash management. It is summary of expected cash inflows/outflows over a projected period.

2.1.7.6 Proforma Financial Statement

It is the final step of master budgeting. It portraits and summarizes results to be achieved in future. Financial Statements generally include budgeted income statement, balance sheet and cash flow statements.

2.1.7.6.1 Proforma Income Statement

It shows magnitude of profit. It will serve as target or benchmark for the year. In other words it shows how profitable is the business.

2.1.7.6.2 Proforma Balance Sheet

It gives clear picture of financial position of organization, with ending balance of all accounting titles. It shows glimpse of liability (from current liability to long terms debt) assets (from current assets to fix assets).

2.1.7.6.3 Budgeted Cash flow Statement

Cash flow shows inflow/out flow of cash under the head of operating activities, financial activities and investing activities. As accounting entries are done on the basis of

accrual basis, to show true cash transaction cash flow statement is prepared. Cash flow comprises both short and long term perspective of cash. It further comprises both capital income/expenditure and revenue income/expenditure

2.1.8 Flexible Budgeting

Budget can be categorized in static and flexible in nature. Master budget is static in nature and prepared for curtained activity level. It is estimated that the activity will no change significantly. But it's only coincident that there will not be significant deviation. In the uncertain future anything can happen, so different alternatives should be kept ready for these purposes. If there is significant change whole budget has to be modified and readjusted with great deal of effort. Such draw backs are eliminated in flexible budget. Flexible budget is not based on only one level of activity rather it shows wide range of estimates within relevant range of activity. It helps in control of overheads setting bases for control.

Overheads (Y) = Fixed cost + variable costs (per activity) x activity

= FC + UVC x activity

In above formula after ascertaining the fix cost and unit variable cost (UVC), it can be calculated overheads for different activities. So it is automatically geared to changes in volume.

Desirability of Flexible budgeting

- It is desirable for such type of business which have unpredictable sales
- For new ventures/launches prediction of volume of activities is very hard. So different alternatives can be prepared with flexible budget
- Flexible budgeting is also desirable for organization having fluctuating activity levels
- For those organization which activities are entirely customers' demand driven

Flexible budgeting helps in marginal analysis by presenting details regarding output costs, sales and profit for different levels of activity. For overhead control, actual performance can be compared with budgeted one for actual activity level. It can not be done is static budget. Thus it is indispensable management accounting tools for cost reduction and control. It also gives information about usage of capacity (in terms of percentage) of both plant and human resources.

2.1.9 Responsibility Accounting

In today's complex and dynamic world, all organization can not be managed and controlled centrally. Decentralization is the must. Responsibility accounting is a form and process of decentralization. Whole organization is divided into smaller units: - division, segments, department, branches, product line etc. Every unit is managed and controlled by responsible person, manager. Authority and responsibility are delegated to the respective manager making him/her accountable. The manager should report the performance of the unit to the top management.

Responsibility accounting refers to the various concepts and tools used by managerial accountants to measure the performance of people and departments in order to ensure the achievement of the goals set the top management. (Bajracharya & et al, 2004:459)

Traditionally responsibility accounting refers only to financial performance (cost, revenue and profit) of sub units. But nowadays it measures overall performance of the unit. Process of responsibility accounting

- Identifying the responsibility centre

First of all, separable and identifiable units for operating purpose are identified as a responsibility centre.

- Delegation of authority and responsibility

After identification of responsibility centre specific authority and responsibility are assigned to respective manager. It is the process of decentralization. Along with authority and responsibility, accountability is also transferred.

- Controllability of the object

It defines that the manager is accountable for the cost which is controllable by him/her. He/she cannot make decision beyond his/her limit.

- Establishing performance evaluation criteria

In this step, criteria to evaluate the performance are established to find whether performance is acceptable or not. The criteria are standard costing, budgetary control, profitability ratios, valuation measures etc.

- Selecting cost allocation bases.

In this step, basses for allocation of joint cost corporate cost are identified. The allocation of the joint cost heavily influences the performance of the unit. So an appropriate

and agreed based should be selected. The widely used methods are traditional costing method and activity based costing (ABC) method. Activity based costing (ABC) is an accurate method.

Finally responsibility accounting is method to measure the performance of a sub unit, with perfect use of decentralization. It has following contribution:

- Decentralization
- Segment evaluation
- Motivation
- Transfer pricing
- Drop or continue decision

2.1.10 Activity Based Costing (ABC)

Widely practiced method of allocating overhead cost is traditional costing method and activity based costing (ABC). Traditional costing relies on arbitrary cost allocation, and allocate indirect cost object using single overhead rate. It tends to over cost high volume and under cost low volume products. Although its simple many drawbacks of tradition costing method, Activity based costing has been evolved. It uses cause and effect cost allocation and multi bases. In the words of T. Lucy, "ABC seeks not only to allocate to product cost on a more realistic basis than simple production volume but also attempts to show relationship between overhead costs and activities that cause them."

Under the ABC system, the activity-cost pools are allocated to products on the basis of activity cost drivers. Activity cost drivers form the cost allocation base, which is chosen so that there is a cause and effect relationship between it and the costs, in the activity-cost pool. Therefore, identification of a cost allocation base or the cost driver for each activity is the most crucial and determining stage in the ABC system. A rate per unit is calculated for each cost driver. Indirect costs are allocated to products on the ratio of the total quantity of the cost driver for each activity used by the product. (Bajracharya & et al, 2004:107)

Activity	Example of cost	Cost allocate base	Cause and effect relationship that motivates the choice of allocation base
Design	Design engineering salaries	Parts times cubic feets	Complex products (more parts and larger size) require greater design resources.
Setups of machines	Setup labour and equipment cost	Setup-hours	Overhead costs of the setup activity increase as setup hours increase
Manufacturing operation	Plant and equipment, energy	Machine hours	Manufacturing operations, overhead costs support machines and hence increase with machine usage
Distribution	Shipping labour and equipment	Cubic feet	Distribution overhead costs increase with cubic feet of product shipped
Administration	Division executive salaries	Revenues	Weak relationship between division executive salaries and revenues but justified by CAI on benefits received basis
Facility	Building and space costs	Square feet	Facility costs increase with square feet of space

(Bajracharya & et al, 2004:107)

The process of Activity based costing (ABC) as follows:

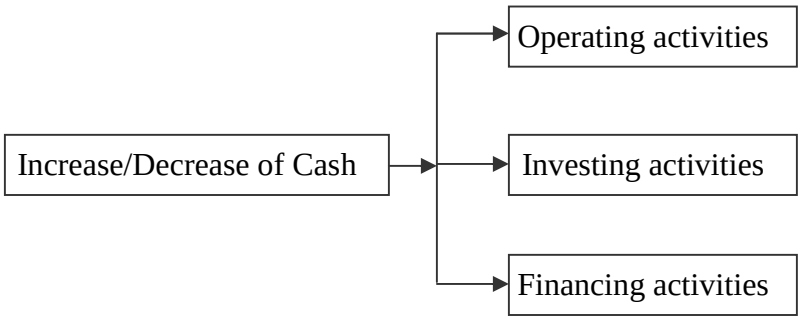
- Identification of major activities
- Determination of cost drivers
- Creation of cost centre/cost pool
- Trace the cost of activities to products

2.1.11 Cash Flow Statement Analysis

The cash flow statement is an important financial statement which show inflow and out flow of cash and cash equivalent. Cash equivalent generally includes highly liquid short term investments such as treasury bills, money market funds, commercial papers etc. Information about cash receipt and payment is also can be obtained from cash book, but cash flow statement provides more information to decision maker about increase and decrease of in operating, investing and financing activities.

Fig- 2.12

Cash Flow Statement



Cash flow statement analysis reflects financial health of the organization like ability to give positive cash flow in future and ability to meet short term and long term obligation. In this statement accrual based accounting information is converted into cash based information and rearranged under the group of operating, investing activities and financing activities. Hence cash flow statement provides vivid description about the solvency and financial position of business.

Importance of cash flow statement

It provides following information:

- Ability to generate positive future cash flows
- Ability to meet financial obligation
- Assess the reasons for differences between income and cash receipt and payment
- Information about both cash and non cash aspects of investment and financial activities
- Correlation of income with cash flows
- Liquidity, solvency and financial flexibility

2.1.12 Zero Based Budgeting

Zero-Base Budgeting is a technique and tools of planning and decision-making. It reverses the working process of traditional budgeting. In traditional incremental budgeting, departmental managers need to justify only increases over the previous year budget. This means what has been already spent is automatically sanctioned. In case of ZBB, no reference

is made to the previous level of expenditure. Every department function is reviewed comprehensively and all expenditures rather than only increases are approved.

ZBB is a technique, by which the budget request has to be justified in complete detail by each manager starting from the Zero-base. The Zero-base is indifferent to whether the total budget is increasing or decreasing. The managers have to starts from zero level justifying all costs in terms of cost and benefits.

Benefits of ZBB

1. Results in efficient allocation of resources as it is based on needs and benefits
2. Drives managers to find out cost effective ways to improve operations
3. Detects inflated budgets
4. Useful for service departments where the output is difficult to identify
5. Increases staff motivation by providing greater initiative and responsibility in decision-making
6. Increases communication and coordination within the organization
7. Identifies and eliminates wastage and obsolete operations.
8. Identifies opportunities for outsourcing.
9. Forces cost centers to identify their mission and their relationship to overall goals.

Drawbacks of ZBB

1. Difficult to define decision units and decision packages, as it is very time-consuming and exhaustive.
2. Forced to justify every detail related to expenditure. The R&D department is threatened whereas the production department benefits.
3. Necessary to train managers. ZBB should be clearly understood by managers at various levels otherwise they cannot be successfully implemented. Difficult to administer and communicate the budgeting because more managers are involved in the process.
4. In a large organization, the volume of forms may be so large that no one person could read it all. Compressing the information down to a usable size might remove critically important details.

5. Honesty of the managers must be reliable and uniform. Any manager that is prone to exaggeration might skew the results.

2.1.13 Lease of buy

During business operation, such type of decision (Lease or buy) to be taken for example an industry is in need of a plot of 10 annas, the industry can either buy or lease the plot. Leasing is a contract between owner (lessor) and a hirer (lessee) for the hiring of a specific asset. In such contract lessee gets only possession, ownership remains own owner himself. Maintenance of the assets should born by the either party as stated on the contract. In lease lessee has to pay rent. In case of buying he has to pay bank interest (in case debt financing), have depreciation facilities and scrap value. These two financing alternatives are evaluated on basis of after tax cash flows with the help of time value of money. The alternative having least cost is selected. Other aspects such as availability of lease, financing, administrative burden also should be considered

2.2 Pricing

Price is a crucial factor, which determines market success and in turn business success. Cost is expected to recover from sales revenue. As these organizations are profit-oriented so price should be above cost. Pricing should be one with perfect information, as it has long term effect and costly to change if it is put into effect. Elite class wants high quality regardless of price where as middle class wants acceptable quality at affordable/reasonable price. Market survey should be done to have information about market characteristics.

Competitor analysis is also important in pricing decision. There may be many industries targeting same customer to sell their product so vigilant watch on movement is necessary.

2.2.1 Methods of Pricing

a) Variable Cost Pricing

It considers only variable cost for pricing like direct material, direct labour etc. It is based on marginal costing. For merchandising organization, variable cost includes mainly cost

of the product. And other administration cost. First of all total valuable cost is computed and some mark up percentage is added to arrive to price. Mark up percentage is set to cover the cost of all kind.

Selling price per unit = Variable cost price per unit + mark up

b) Absorption Cost Pricing

This method considers both variable and fixed cost for pricing of the product. In other words it incorporates both product and period cost. Total cost for the product is compiled then mark up is added to set price.

Sales price per unit = Cost price per unit + mark up

It is based on the concept that product cost includes all direct cost and allocation of fixed cost

c) Target Return/Return on Investment (ROI) pricing

Return on Investment (ROI) is ratio of income to invested capital. In order words it is required rate of return on investment to cover all opportunity cost. As there may be more than one alternative investment sector as an opportunity cost. The return that could be earned by investing same resources in the next alternatives is the minimum required rate of return on investment

$$\text{ROI} = \frac{\text{Income}}{\text{Capital Investment}}$$

d) Activity Based Costing (ABC)

It is method of allocating overhead to products with application of relationship between overhead costs and activities that cause them. It assumes that overhead is influenced by diversity and complexity of products rather than volume of output. Mostly organizations having multiple products use this method. Costs are accumulated by activity centres in this method. First, all major activities are identified then cost driver for each major activity is assign. Cost centre/cost pool for each major activity is created then cost of activities is traced to products.

2.3 Transfer Pricing

In the words of Horngren, Foster and Datar, a transfer price is price that a subunit of an organization charges for products or services supplied to another subunit of the same organization. The transfer price creates revenue for the selling subunit and a purchase cost for buying subunit, affecting operating income numbers for both subunits. The operating income can be used to evaluate the performance of each subunit and to motivate managers. Likewise, in the words of Kaplan and Atkinson transfer pricing is the principal tool of financial control in decentralized organization. So it is basis of segment reporting.

In organization there may be more than one department if one department transfers goods/services to other and charge for the products/services it is called transfer pricing. Transfer price affects performance and ultimately profitability of both transferring and receiving department. Transfer price is revenue for transferor and cost for transferee.

2.3.1 Methods of Transfer Pricing

Transfer pricing is set to meet objectives of organization as a whole considering goal congruence. Likewise motivation of department manager is also important.

a) General Transfer Pricing

Transfer Price =	Additional outlay cost per unit incurred because goods are transferred	+	Opportunity cost per unit to the organization because of the transfer

This transfer price is based on opportunity cost. Opportunity cost (if the goods/services sold else where) is added to variable cost to determine transfer price.

b) Cost based Transfer Pricing

On cost based transfer pricing goods/services charged on the basis cost of the product/services. Price can be charged either considering variable cost only or considering full cost. In variable cost pricing only variable cost considered and in absorption both variable and fixed costs are considered

c) Market Price Based

In this method price is set equal to market price for the same goods/services. One department treats other department as external customer under this pricing method.

d) Negotiation

In this method department managers of department bargain/discuss to reach a reasonable price within best interest of organization as a whole. Transferring department tries to set price high as market price but receiving department wants to lower the price. Finally a reasonable price is set.

e) Target Return

In this method pricing is set as per required rate return on investment (ROI). To set price the department determine its required rate of return and set transfer price.

2.4 Review of Previous Research on Management Accounting Practice

Many researches have been conducted on management accounting practice in Nepalese context, especially in profit planning and controlling, financial statement analysis, cost volume profit analysis etc. Few researches have been made in application of management accounting tools in Nepalese context. These researches have shown that management accounting is still a new thing and in developing stage in Nepal. Decision is taken in intuition of strategic manager rather than applying management accounting tools. Here, review of previous of previous research conducted on management accounting practice has been presented

2.4.1 Mr. Sagar Sharma (2002): Mr. Sharma has conducted a research work entitled "Management Accounting Practices in Listed Companies of Nepal". On the basis of primary data, 0h1e has focused on management accounting practices by these listed companies. Major finding of his research are:

- Budgeting, cash flow, ratio analysis are widely used management accounting tools.
- Cost segregation, break even analysis, standard costing, long term budget are slightly in use. Activity based costing, responsibility accounting are not in use.

- For capital budgeting payback period and Net preset value are widely used
- 70% and more practice master budgeting among them 87% used actual expenses to prepare the budget.
- Mostly Profit and loss is used to measure overall performance of company
- Cost base pricing is used to price the products/services
- 100% company practice past trend to forecast cost and revenue.
- Management account tools are not practiced mainly lack of information and cost factor.

2.4.2 Mr. Krishna Bahadur Karki (2006): Mr. Karki has conducted research entitled, "Management Accounting Practice in Joint Venture Banks of Nepal". Basing on primary data he has focused on management accounting tools used in these banks. The major findings of his research are:

- Capital budgeting, cash flow and annual budget are widely used in Joint Venture (JV) banks.
- Activity based costing (ABC), standard costing, long term budgeting and zero based budgeting are no in use.
- For capital budgeting profitability index (PI) and net present value are widely used. No banks are using modified internal rate of return (MIRR).
- Past actual budgets are used as base for preparation of budgeting.
- All most all JV banks practice short term budgeting. They use profit and loss account, ratio analysis and cash flow statement to evaluate overall performance of bank
- Transfer pricing are not in use those banks due to nature business.

2.4.3 Mr. Narayan Prasad Acharya (2006): Mr. Acharya has conducted research entitled, "Management Accounting Practice in Nepalese Public Enterprises." He has focused on management accounting practice basing on primary data. Major finding of his research are:

- Annual budgeting, cash flow statement, responsibility accounting are widely practiced in PEs.
- Break even analysis, capital budgeting, financial statement analysis, flexible budgeting are only slightly used in these enterprises.

- For preparation of budget they based on actual past expenses.
- Role of government is prominent in pricing of product/services
- Use of transfer pricing is not in use in these PEs.
- They use First in First Out (FIFO) for pricing of inventory issues.
- Profit and loss account is use for evaluation of overall performance of the enterprises.
- The decision of these organizations is done under the political influence rather than on the basis of management accounting.

2.4.4 Mr. Ailendra Kumar K.C. (2006): Mr. K.C. has conducted research entitled, "Management Accounting Practice in Nepalese Public Enterprises." He has focused on management accounting practice basing on primary data. Major finding of his research are:

- Annual budgeting, cash flow statement, capital budgeting, ratio analysis are widely used in these PEs.
- Only 5% use Activity based costing (ABC) and 17% use responsibility accounting.
- For capital budgeting, 72% use net present value (NPV) and 55% use payback period (PBP).
- Zero based budgeting (ZBB), activity based budgeting (ABB) are not in practice, rather they use past expenses as base for preparation of budget. And mostly short term budgeting are used. No PEs are practicing regression analysis.
- Profit and loss are used to evaluate the overall performance of organization as a whole.
- Transfer pricing are rarely practiced.

2.4.5 Mr. Lila Raj Baral (2007): Mr. Baral has conducted research work entitled, "Management Accounting Practice in commercial Banks of Nepal". He has focused on management Accounting tools used in Commercial Banks of Nepal with making base on primary data. Major findings of research are:

- Among 17 sampled commercial banks, it is found that Ratio Analysis, Cash flow Statements, and Capital budgeting are widely practiced.
- With regards to cost segregation, A total of 41% banks applied analysis method, 18% applied average method and 6% applied other methods to segregate the mixed costs.

- Actual expenses of previous year and past budget are widely taken as bases to prepare budget.
- Regarding the types of budget, most of the commercial banks prepare annual budget. Master budget and long term budget are also in use.
- With regard to pricing, nearly 48% banks adopted full-cost pricing technique, while ABC costing is also in use.
- Nearly half of the commercial banks adopted perpetual method of inventory valuation and periodic method was also adopted by similar proportion.
- With regards to capital budgeting techniques, 54% banks adopted Net Present Value, 30% banks adopted Pay Back Period and Internal Rate of Return and 24% banks applied ARR.
- Most of the banks practiced profit and loss to measure and control the overall performance at the end of the year. Budgetary control technique, Ratio Analysis, Cash Flow Analysis, and Activity Based Costing are also widely practiced techniques to measure the performance.

2.4.6 Mr. Anjan Maharjan (2008): Mr. Maharjan has conducted research work entitled, "Management Accounting Practices in Vehicle Dealers". Basing on primary data, he has focused on management accounting tools used in vehicle dealers. The major findings of his research are:

- Cost segregation into fixed and variable cost, tax effect analysis, standard costing, ratio analysis, master budgeting and cash flow statements were practiced by all these selected vehicle dealers.
- Vehicle dealers used high-low point method, average and analysis method to segregate cost into fixed and variable.
- The selected vehicle dealers practiced prepare budget on the basis of past budget on increment basis along with target set.
- All five vehicle dealers practiced overall master budget.
- For capital budgeting NPV and IRR are used by majority of dealers where as ARR, PI, and DPBP were practiced by rest of them.

- Regarding pricing method, most of the listed vehicle dealers practiced full-cost pricing where as ABC was used by rest of others.
- Forecasting of cost and revenue were done on the basis of past trend analysis in all selected vehicle dealers.
- FIFO LIFO and Weighted Average method were used for pricing inventory issue. EOQ was widely practiced for inventory management.
- The major problems in application of management accounting tools in vehicle dealers are cost factor, lack of industrial data and unknown of proper standard.

2.5 Research Gap

This research differs with the previous not only in the time frame, but also in the nature of organization as well. Mainly six researchers Mr. Sagar Sharma, Mr. Krishna Bahadur Karki, Mr. Narayan Prasad Acharya, Mr. Ailendra Kumar K.C., Mr. Lila Raj Baral and Mr. Anjan Maharjan have done their research work on the topic of management accounting practice. Mr. Sharma has conducted his research work within the periphery of listed companies of different types. Mr. Karki Mr. Acharya have selected the organization, Joint venture banks and Public enterprises respectively. Mr. K.C. has conducted research on Public enterprises. Whereas Mr. Baral and Mr. Maharjan have conducted their research on commercial banks and vehicle dealers respectively. No research work has been done in the field of purely industrial sector in this topic and earlier research works do not give the fair picture of application of management accounting tools in solely industrial sector. So, rather than those earlier researches, this research work is specifically related to the application of management accounting tools and techniques in industrial sector. It is said that management accounting is very closely linked to the cost accounting and cost accounting is widely practiced in the industries.

CHAPTER- III

Research Methodology

3.1 Research Design

The research attempts to analyze the management accounting practices in Nepalese industrial sector. This study focuses on major accounting tools practiced by industries of Balaju Industrial Estate. As per the nature of study, survey research is followed with descriptive and analytical approach. Hence descriptive and comparative analysis is used. T-test and Chi-square test are used for testing the hypothesis.

3.2 Source of Data

Data are mainly collected from primary sources; Primary data are collected through questionnaire, interview and discussion. Secondary data are also being used as per required.

3.3 Population and Sample

The total population includes the entire industries of Balaju Industrial Estate. There are almost 75 industries are in operation. Apart from that 25 are in under construction and 13 were already closed. The industries which are now in operation have been taken as target population. Among them 15 has been taken as sample population. Name list of these sample industries are as follows.

Selected industries and their product

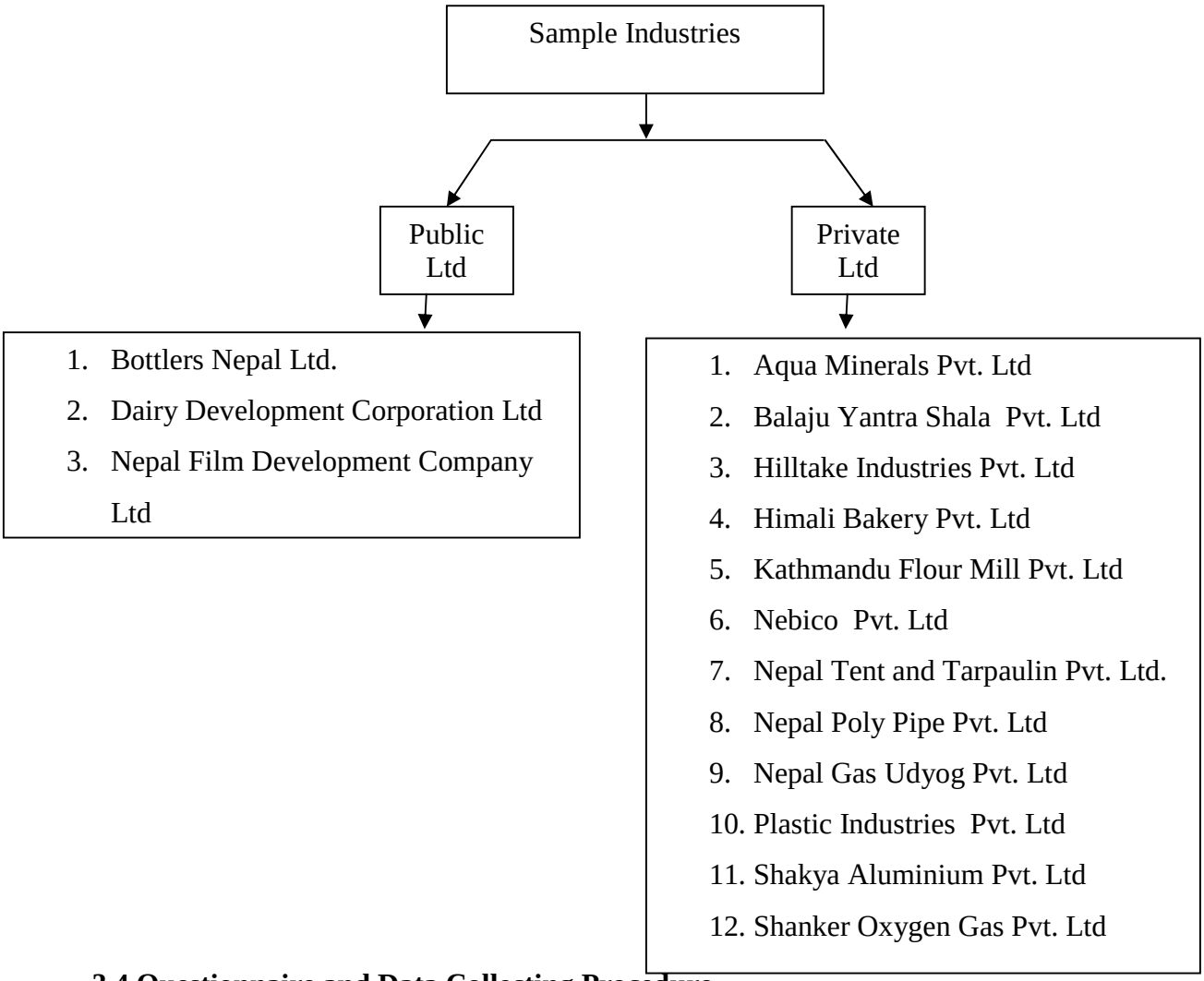
1. Aqua Minerals Nepal Pvt. Ltd.	Mineral Water
2. Balaju Yantra Shala Pvt. Ltd	Turbine, Hanging Bridges
3. Bottlers Nepal Ltd	Beverage
4. Dairy Development Corporation Ltd	Milk and Milk Product
5. Hilltake Industries Pvt. Ltd	Plastic water tanks
6. Himali Bakery Pvt. Ltd	Bakery Products
7. Kathmandu Flour Mill Pvt. Ltd	Wheat Flour
8. Nebico Pvt. Ltd	Biscuits and Chocolate
9. Nepal Tent and Tarpaulin Pvt. Ltd.	Tent, Slipping Bag
10. Nepal Film Development Company Ltd	Film Production and Mixing
11. Nepal Poly Pipe Pvt. Ltd	Polythene Pipe
12. Nepal Gas Udyog Pvt. Ltd	L. P. Gas
13. Plastic Industries Pvt. Ltd	Plastic Bottle
14. Shakya Aluminium Industry Pvt. Ltd	Aluminium Utensils

15. Shanker Oxygen Gas Pvt. Ltd Oxygen Gas

The sample is selected on non probability sampling basis. For the sampling, purposive/judgmental sampling was used.

The Industries are divided into two categories according to the ownership of the organization. They are Public Limited Company and Private Limited Company.

Fig-3.1



3.4 Questionnaire and Data Collecting Procedure

The data were collected through questionnaire, interview and discussion directly from concerned organization. Objective questions relating to industries contain general management accounting practice. The questionnaires were of "tick-mark" and multiple choices. They were given an option of 'other if any' where they can express their practice if

those were different from listed in the questionnaire with their views and with free expressions. First one spare question was about type of ownership. Then other, eighteen questions are about management accounting practice which were entirely multiple choices. Last two questions were about difficulties and potential benefits of management accounting practice in listed Industries. These questions were open type. The questionnaire provided to concerned organization, from the management the questionnaire was filled up, wherever necessary short interview and discussion were taken as well. They were assured that the information would be kept confidential, and used for academic purpose only, would not be printed in any form.

3.5 Data Processing Procedure

The data collected were categorized in suitable comparative tabular form. The data were processed with simple arithmetic mean and percentage basis. Bar charts, set charts and flow charts were used to make the presentation lucid. For testing hypothesis students' t-test and chi-square test are used.

3.6 Major Management Accounting Tools

The management tools discussed in this research are as follows

1. Capital Budgeting
2. Cost Segregation into Fixed and Variable
3. Tax Effect Analysis
4. Standard Costing
5. Break Even Analysis (BEP)/Cost-Volume-Profit (CVP) Analysis
6. Ratio Analysis/Financial Statement Analysis
7. Master Budgeting
8. Flexible Budgeting
9. Responsibility Accounting
10. Activity Based Costing (ABC)
11. Cash Flow Statement
12. Zero Based Budgeting (ZBB)
13. Lease or Buy

3.7 Statistical Procedure

For the analysis of the data, simple mean and percentage were used. For testing the hypothesis, Managerial accounting tools used by each Industry were totaled individually. But the relative importance of the tools was not considered. Then student's t-test was used for testing the hypothesis. Similarly similarities/differences in practiced of management accounting in between Public Limited Companies and Private Limited Companies were tested with chi-square test.

CHAPTER-IV
Data Presentation and Analysis

The main objective of the study is to examine the present practice of management accounting tools and techniques in Nepalese Industrial Sector. The other objectives are to identify the future perspectives of management accounting tools application and to scrutinize the major difficulties in the application of management accounting tools in Nepalese Industrial Sector.

Every Industry needs a strategic move to survive in competitive market. Proper planning, controlling and effective decision-making play a vital role to lead the organization towards achievement of objectives. Management accounting is the means to effective planning, controlling and decision-making. Management accounting mainly focuses on internal users. Therefore, the focus of the study is to explore the management accounting tools used by Industrial Sector. To cope with the complicated, dynamic and competitive environment, management accounting tools may prove very helpful to the industries. Globalization has added both threats and opportunities. Capable organization will reap the opportunities and it will pose threats to weak organization.

There are 75 Industries operating their functions in the Balaju Industrial Estate. Out of which 15 Industries representing 20% of total population has been selected as sample by using stratified judgmental sampling.

The research was survey type. Questionnaire was scheduled consisting of eighteen-tick mark and two open-end questions. Questionnaires were distributed directly to the corporate office of the industry. Authentic persons like finance manager, accounts manager, auditor, account officers etc. were asked to fill up the questionnaire. All these Fifteen Industries responded to the questionnaires. Short table interviews/opinions were also taken wherever necessary. Thus, primary data were used.

The raw data have been processed, tabulated and analyzed. Percentage analysis, student's t-test and chi-square have been used for analyzing the data.

4.1 Type of Ownership of the Sample Industries.

Table-4.1

S.N.	Industry	Type of Organization			
		Sole Trading	Partnership	Public Ltd	Private Ltd
1	Aqua Minerals Nepal Pvt. Ltd.	-	-	-	√
2	Balaju Yantra Shala Pvt. Ltd	-	-	-	√
3	Bottlers Nepal Ltd	-	-	√	-
4	Dairy Development Corporation Ltd	-	-	√	-
5	Hilltake Industries Pvt. Ltd	-	-	-	√
6	Himali Bakery Pvt. Ltd	-	-	-	√
7	Kathmandu Flour Mill Pvt. Ltd	-	-	-	√
8	Nebico Pvt. Ltd	-	-	-	√
9	Nepal Tent and Tarpaulin Pvt. Ltd.	-	-	-	√
10	Nepal Film Development Company Ltd	-	-	√	-
11	Nepal Poly Pipe Pvt. Ltd	-	-	-	√
12	Nepal Gas Udyog Pvt. Ltd	-	-	-	√
13	Plastic Industries Pvt. Ltd	-	-	-	√
14	Shakya Aluminium Industry Pvt. Ltd	-	-	-	√
15	Shanker Oxygen Gas Pvt. Ltd	-	-	-	√
	Total	-	-	3	12

Capital accumulation, mode of control, decision-making, and size of business depend upon type of ownership in a very large extent. Three (20%) out of Fifteen Industry are registered as Public Limited and the remaining Twelve (80%) are registered as Private Limited. It is seen that private limited companies are in great number in the Balaju Industrial Estate when comparing to the Public Limited Companies.

4.2 Management Accounting Practices in the Sample Industries of Balaju Industrial Estate

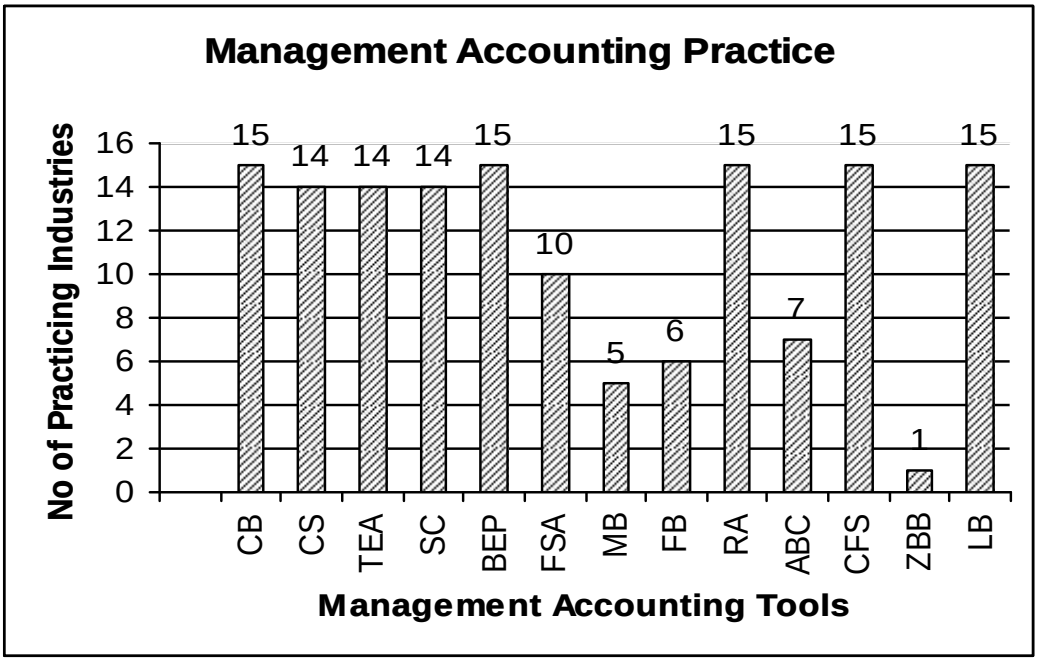
Table-4.2

S.N.	Management accounting Tools	No of Population Industry	No. of sample industry	No of practicing industry	Percentage (%)
1	Capital Budgeting	75	15	15	100
2	Cost Segregation into Fixed and Variable	75	15	14	93
3	Tax Effect Analysis	75	15	14	93
4	Standard Costing	75	15	14	93
5	Break Even Analysis (BEP)/Cost-Volume-Profit (CVP) Analysis	75	15	15	100
6	Ratio Analysis/Financial Estatement Analysis	75	15	10	67
7	Master Budgeting	75	15	5	33
8	Flexible Budgeting	75	15	6	40
9	Responsibility Accounting	75	15	15	100
10	Activity Based Costing (ABC)	75	15	7	47
11	Cash Flow Estatement	75	15	15	100
12	Zero Based Budgeting	75	15	1	7
13	Lease or Buy	75	15	15	100

(Source: Appendix-1)

The above Table 4.2 demonstrates management accounting tools practiced in selected industries of Balaju Industrial Estate, which reveals that, all the industries under sample selection use Capital Budgeting. 93% of industries applied Cost Segregation into Fixed and Variable. Similarly, 93% of them use Tax effect Analysis and Standard Costing. Again, BEP is used by all the fifteen industries. 67% of them use Financial Estatement Analysis and 33% use the Master budgeting. Similarly, 40% of them use Flexible Budgeting.

Fig-4.1



Where

CB = Capital Budgeting
CS = Cost Segregation into Fixed and Variable
TEA = Tax Effect Analysis
SC = Standard Costing
BEP = Break Even Analysis (BEP)/Cost-Volume-Profit (CVP) Analysis
FSA = Ratio Analysis/Financial Estatement Analysis
MB = Master Budgeting
FB = Flexible Budgeting
RA = Responsibility Accounting
ABC = Activity Based Costing (ABC)
CFS = Cash Flow Estatement
ZBB = Zero Based Budgeting
LB = Lease or Buy

All the industries under sample selection practice Responsibility Accounting, Cash Flow Estatement and Lease or buy. 47% of them use Activity Based Costing and just 7% of them use Zero-based Budgeting.

Average Number of M. A. tools practicing industries

Hypothesis Test:

Table-4.3
Calculation of $\overline{X}$ and S

Name of Organization	No of tools Practiced(X)	d = X-A (10)	d^2
Aqua Minerals Nepal Pvt. Ltd.	11	1	1
Balaju Yantra Shala Pvt. Ltd	12	2	4
Bottlers Nepal Ltd	12	2	4
Dairy Development Corporation Ltd	8	-2	4
Hilltake Industries Pvt. Ltd	11	1	1
Himali Bakery Pvt. Ltd	11	1	1
Kathmandu Flour Mill Pvt. Ltd	8	-2	4
Nebico Pvt. Ltd	12	2	4
Nepal Tent and Tarpaulin Pvt. Ltd.	10	0	0
Nepal Film Development Company Ltd	10	0	0
Nepal Poly Pipe Pvt. Ltd	9	-1	1
Nepal Gas Udyog Pvt. Ltd	8	-2	4
Plastic Industries Pvt. Ltd	10	0	0
Shakya Aluminium Industry Pvt. Ltd	8	-2	4
Shanker Oxygen Gas Pvt. Ltd	6	-4	16
		$\sum$ d= -4	$\sum d^2$=48

A.M. $\overline{X} = A + \frac{\sum d}{n}$

$= 10 + \frac{-4}{15}$

=9.73

Hence, the Average accounting tools used is 9.73, rounding the figure in average 10 tools are used by the sample industries.

Null hypothesis (H_0): μ = 10 i.e. the industries have practiced at least 10 out of 13, Management accounting tools. In another words, the management accounting tools practiced by these dealers are above 10.

Alternative Hypothesis (H_1): μ<10 (left tailed test) i.e. these industries have practiced less than 10 management accounting tools.

Also, $\hat{\pm}^2 = S^2 = \frac{1}{n-1}\left[\sum d^2 - \frac{(\sum d)^2}{n}\right]$

$$= \frac{1}{15-1}\left[48 - \frac{(-4)^2}{15}\right]$$

$$= \frac{1}{14}\left[48 - \frac{16}{15}\right]$$

$$= 3.35$$

$$S = \sqrt{3.35}$$

$$= 1.8303$$

Test Statistic,

$$t = \frac{\overline{X} - «}{S/\sqrt{n}}$$

$$= \frac{9.73 - 10}{1.8303/\sqrt{15}}$$

$$= -.5711$$

$|t| = 0.5711$

Degree of freedom (d.f.) = n-1 = 15-1 =14

Level of significance, a = 0.05

Critical Value: The tabulated value of *t* at a = 0.05 and 14 d.f. for one tailed test is 1.761, i.e.

$t_{0.05,\ 14} = 1.761$

Decision

Since the calculated value of ***t*** is less than the tabulated value of ***t***, the null hypothesis (H_0) is accepted. Hence, it can be concluded that the selected industries have practiced not below 10 out of 13 management accounting tools.

4.3 Reasons for not Practicing the Management Accounting Tools

All the sample industries accepted only two reasons for not practicing the management accounting tools; those were not relevant and not felt necessary yet. They did not think they lack information and expertise, nor they agreed the time and cost as the cause of not practicing these management accounting tools.

4.4Access to Information Technology (IT)

Table-4.4

S.N.	Type of system	No of Population Industry	No. of sample industry	No of practicing industry	Percentage (%)
1	Professional accounting software	75	15	14	100
2	Internal IT developed system	75	15	1	7
3	Manual	75	15	7	47
4	Other	75	15	-	0

(Source: Appendix-2)

This is the age of Information Technology (IT). It is changing dominantly and drastically the way of doing work making the working system systematic. Tedious works are taking away by these IT systems. The industries need awareness towards the importance of IT. The table shows that all most all the industries (14 out of 15) are using professional accounting software. 47 % of industries are practicing manual accounting side by side with the other professional software. 7 % of them have their own internal IT developed system.

4.5 Technique to Segregate mixed Cost into Variable and Fixed Cost

Table-4.5

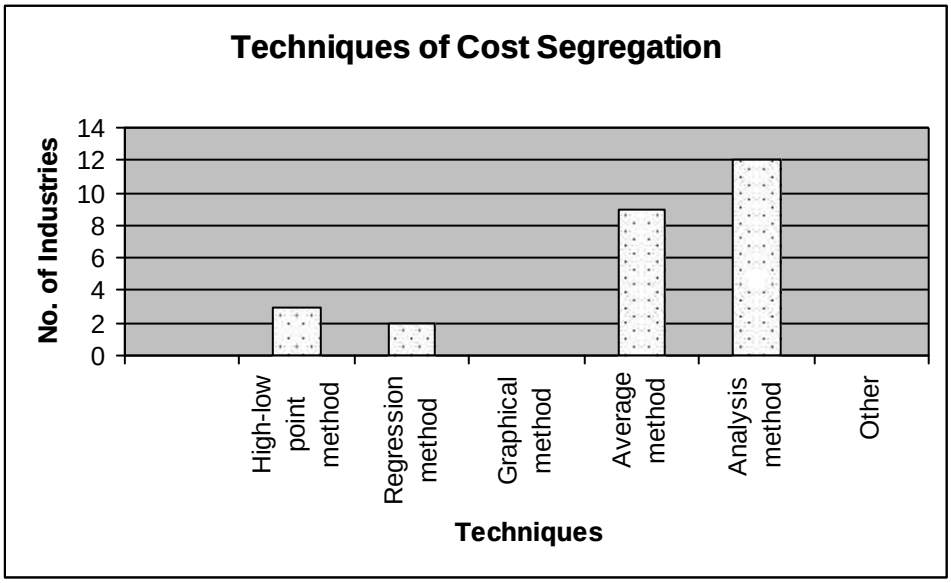
S.N.	Techniques	No of Population Industry	No. of sample industry	No of practicing industry	Percentage (%)
1	High-low point method	75	15	3	20
2	Regression method	75	15	2	13
3	Graphical method	75	15	0	0
4	Average method	75	15	9	60
5	Analysis method	75	15	12	80
6	Other	75	15	0	0

(Source: Appendix-3)

The above table 4.6 shows the methods practiced for segregating mixed cost into variable and fixed cost in sample industries of Balaju Industrial Estate. Only three industries (20%) are applying high low point method to segregate mix cost into variable and fixed cost. The most accurate method namely Regression method is in practice only in two industries. The graphical method is not in practice at all.

60% of industries practice Average method and 80% of them practice Analysis method to segregate mixed cost into variable and fixed cost. Most of the industries are applying these methods because the methods are supposed less complicated and simple.

Fig-4.2



Though the Least Square Regression Method gives, a more reliable estimate in segregating mixed cost into fixed and variable, very few of the industries are applying this method. The reason behind it is that regression method is a statistical method, which is complex in application. Besides, it requires skilled manpower in statistical methods. The companies are not ready to hire statistical experts to segregate the mixed cost.

4.6 Basis for Preparation of Budget

Table-4.6

S.N.	Method	No of Population Industry	No. of sample industry	No of practicing industry	Percentage (%)
1	Past Budget	75	15	13	87
2	Historical Data	75	15	11	85
3	Zero Based Budgeting	75	15	1	7
4	Activity Based Budgeting	75	15	4	27
5	Target Set	75	15	8	53
6	Other	75	15	0	0

(Source: Appendix-4)

The above table-4.7 shows the base for budget preparation in industries of Balaju Industrial Estate. This table reveals that 87 percent of industries apply past budget as reference when preparing a new budget. Similarly, Historical actual data are taking in consideration by 85 percent of industries. Only 7 percent of industries practicing Zero based budgeting whereas 27 percent of them practicing Activity Based Budgeting and 53 percent of them considering Target Set when preparing a new budget. Majority of the industries are using multiple methods rather than one.

4.7 Type of Budget

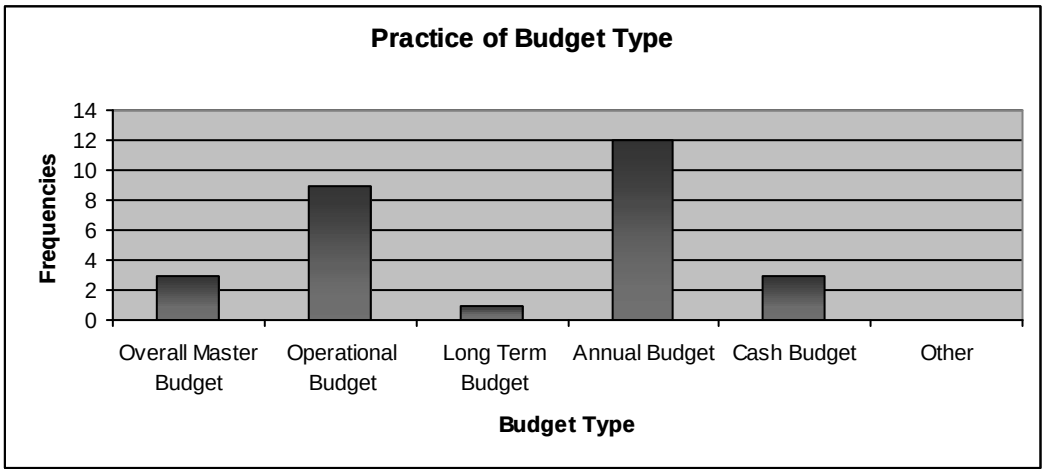
Table-4.7

S.N.	Budget type	No of Population Industry	No. of sample industry	No of practicing industry	Percentage (%)
1	Overall Master Budget	75	15	3	20
2	Operational Budget	75	15	9	60
3	Long Term Budget	75	15	1	7
4	Annual Budget	75	15	12	80
5	Cash Budget	75	15	3	20
6	Other	75	15	0	0

(Source: Appendix-5)

The above table 4.8 shows the type of budget practiced by the sample industries of Balaju Industrial Estate. 20 percent of sample industries practice overall master budget, Where as 60 percent of them practice operational budget. Long-term budget is practicing just 7 percent of the industries.

Fig-4.3



The majority of the industries are applying annual budget system i.e. 80 percent where as 20 percent of sample industries following cash budget. Many of the industries are applying two or more than two types of budget system simultaneously.

4.8 Responsibility for Preparation of Budget

Table-4.8

S.N.	Responsible Parties	No of Population Industry	No. of sample industry	No of practicing industry	Percentage (%)
1	Separate Budget Committee	75	15	0	0
2	Top Management	75	15	14	93
3	Planning Department	75	15	1	7
4	Departmental Managers	75	15	5	33
5	Outside Experts	75	15	1	7
6	Other	75	15	0	0

(Source: Appendix-6)

The table 4.9 depicts the responsible parties for preparation of budget in sample industries. The sample industries have no separate budget committee. Budget is prepared mostly by Top Management. In 93% (14 out of 15) of industries budget is prepared by Top Management. Along with Top management, Departmental managers prepare budget in 7 industries. In Dairy Development Corporation budget is prepared by planning department. In terms of percentage, in 33% of industries, the departmental managers prepare budget, where as Planning Department and Outside Experts are engage in 7 percent of the industries in making of their budget.

All most all of industries practicing Short Term (one year or less) Budget.14 out of 15 industries are applying Short Term where as only one industry (Bottlers Nepal Ltd.) practicing Long Term budget (Five years or more).

4.9 Techniques of Capital Budgeting

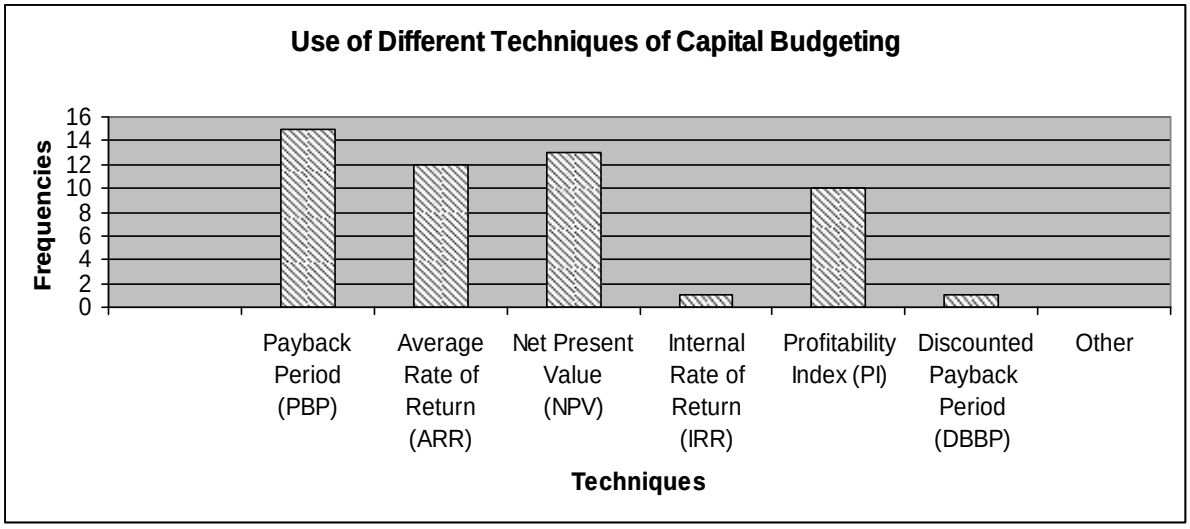
Table-4.9

S.N.	Capital Budgeting Techniques	No of Population Industry	No. of sample industry	No of practicing industry	Percentage (%)
1	Payback Period (PBP)	75	15	15	100
2	Average Rate of Return (ARR)	75	15	12	80
3	Net Present Value (NPV)	75	15	13	87
4	Internal Rate of Return (IRR)	75	15	1	7
5	Profitability Index (PI)	75	15	10	67
6	Discounted Payback Period (DBBP)	75	15	1	7
7	Other	75	15	0	0

(Source: Appendix-7)

The table 4.10 represents the capital budgeting techniques practiced by selected industries of Balaju Industrial Estate. It is revealed in the table that all of the sample industries apply Payback Period as an evaluating tool while making long-term investment. Similarly the percentage of industries practicing Average rate of return and Net Present Value for analyzing capital budgeting is 80% and 87% respectively. In addition, the Profitability Index is applying by the majority of the industries. Internal Rate of Return and Discounted Payback Period are used for evaluating long-term investment by merely 7% of the sample industries.

Fig-4.4



The industries are applying multiple numbers of capital budgeting tools to make their investment decisions more appropriate.

Average Number of Capital Budgeting techniques practiced in sample industries.

Table-4.10

No. of Capital Budgeting Tools (X)	No. of Industry (f)	fx
2	2	4
3	5	15
4	7	28
5	1	5
	N=15	∑fx=52

Average no. of capital budgeting techniques practiced by selected industries ($\overline{X}$) is given by:

$$\overline{X} = \frac{\sum \text{fx}}{N} = \frac{52}{15} = 3.47 \text{ i.e. } 3$$

From above calculation, it is found that in average, three capital budgeting tools are practiced by selected sample industries. 13 % of industries are practicing below the average no. of capital budgeting tools while 33 percent of them practice exactly the average number of tools. 54 % industry use more than the average number capital budgeting tools.

4.10 Pricing Products

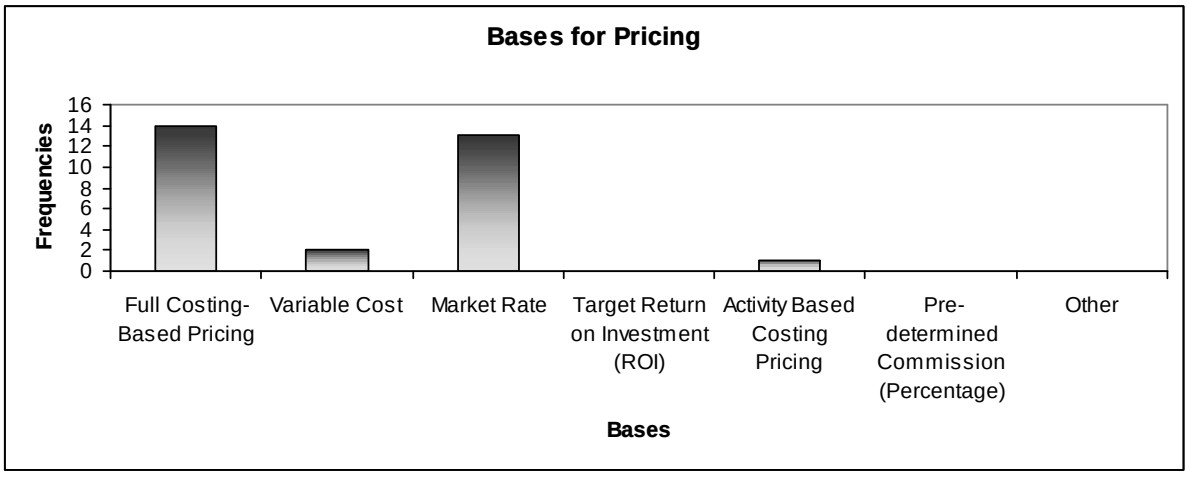
Table-4.11

S.N.	Pricing Techniques	No of Population Industry	No. of sample industry	No of practicing industry	Percentage (%)
1	Full Costing- Based Pricing	75	15	14	93
2	Variable Cost	75	15	2	13
3	Market Rate	75	15	13	87
4	Target Return on Investment (ROI)	75	15	0	0
5	Activity Based Costing Pricing	75	15	1	7
6	Pre- determined Commission (Percentage)	75	15	0	0
7	Other	75	15	0	0

(Source: Appendix-8)

The table- 4.12 depicts the product pricing techniques practiced by sample industries of Balaju Industrial Estate. 93% of industries following full costing based pricing while market rate is taken into consideration by 87 % industries when fixing price of their product. Variable cost is counted by 13% of industries while 7% of them follow activity based costing pricing.

Fig-4.5



Majority of the industries adopting full costing based pricing and market rate simultaneously while pricing of their products.

4.11 Measure and Control of Overall Performance

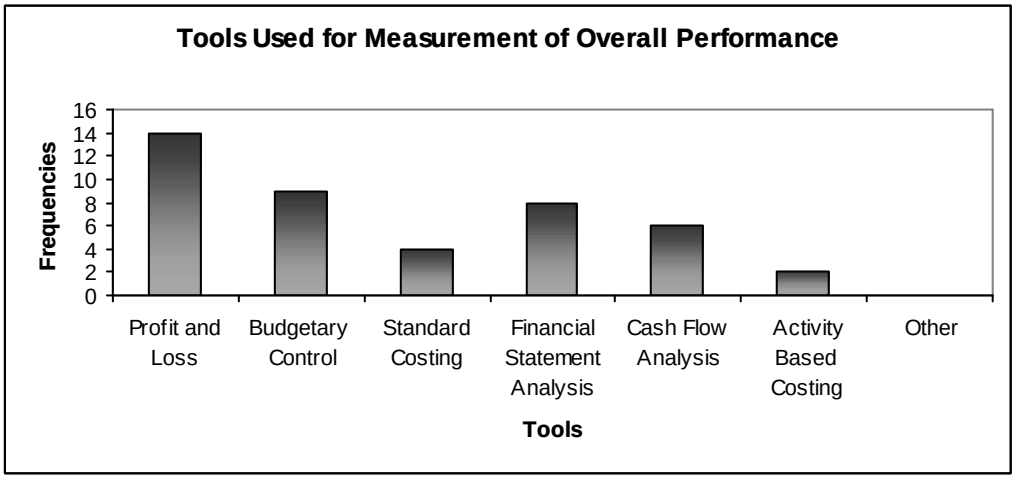
Table-4.12

S.N.	Tools	No of Population Industry	No. of sample industry	No of practicing industry	Percentage (%)
1	Profit and Loss	75	15	14	93
2	Budgetary Control	75	15	9	60
3	Standard Costing	75	15	4	27
4	Financial Estatement Analysis	75	15	8	53
5	Cash Flow Analysis	75	15	6	40
6	Activity Based Costing	75	15	2	13
7	Other	75	15	0	0

(Source: Appendix- 9)

Above table-4.13 shows the year ending overall performance measuring and controlling techniques practiced by sample industries of Balaju Industrial Estate. It is seen in the table that, nearly 93% of industries measure and control overall performance at the end of the year on the basis of profit or loss made by the industry. Similarly, 60%, 53%, 40% and 27% of them respectively practice Budgetary Control, Financial Estatement Analysis, Cash flow Analysis and Standard Costing to evaluate overall performance. Only 13% of industries are using Activity based costing technique to measure and control the performance.

Fig-4.6



Though the Standard costing and activity based costing are very ideal to measure and control the industry performance, very few of them are using as techniques to evaluate performance.

Average number of techniques practiced by selected industries which measure and control the overall performance:

Table- 4.13

No. of techniques (X)	No. of Industry (f)	fx
1	1	1
2	6	12
3	4	12
4	3	12
6	1	6
	N=15	∑fx=43

Average no. of performance measuring and controlling techniques practiced by listed industries ($\overline{X}$) is given by:

$$\overline{X} = \frac{\sum \text{fx}}{N} = \frac{43}{15} = 2.87 \text{ i.e. } 3$$

From above calculation it is found that, in average 3 techniques are practiced to measure and control overall performance by sample industries at the end of the year. From table-4.14, it is revealed that 47% industries use below average no. of measuring techniques, while 26% of them use exactly average no. of tools. Again 27% of them practice more than the average no. of year ending overall performance measuring and controlling techniques.

4.12 For Forecast/Estimate the Costs and Revenues

Table-4.14

S.N.	Techniques	No of Population Industry	No. of sample industry	No of practicing industry	Percentage (%)
1	Past Trend Analysis	75	15	14	93
2	Zero based Budgeting	75	15	1	7
3	Market Survey	75	15	13	87
4	Judgmental analysis	75	15	3	20
5	Other	75	15	0	0

(Source: Appendix-10)

The above table-4.14 depicts that techniques practiced by sample industries for forecasting the costs and revenues for the future.

Almost all industries forecast/estimate the cost and revenue based on past trend analysis. Along with the past trend analysis market survey was also used by majority of the industries. In term of percentage, past trend analysis is used by 93% (14 out of 15) and market survey is used by 60% (13 out of 15) industries. Judgmental analysis is practiced only by 20%. Modern techniques Zero Based Budgeting (ZBB) is practice by only one industry. Most of the industries are considering multifactor to forecast/estimate the cost/revenues.

4.13 Issue of Inventory

For costing of issue of inventory, most of the industries followed first in first out (FIFO) method except two industries. Balaju Yantrashala is practicing last in first out (LIFO) method and Bottlers Nepal following weighted average method. Simple average method is also in practice in some industries simultaneously with FIFO method for pricing the issued inventory.

4.14 Consideration for Inventory Procurement

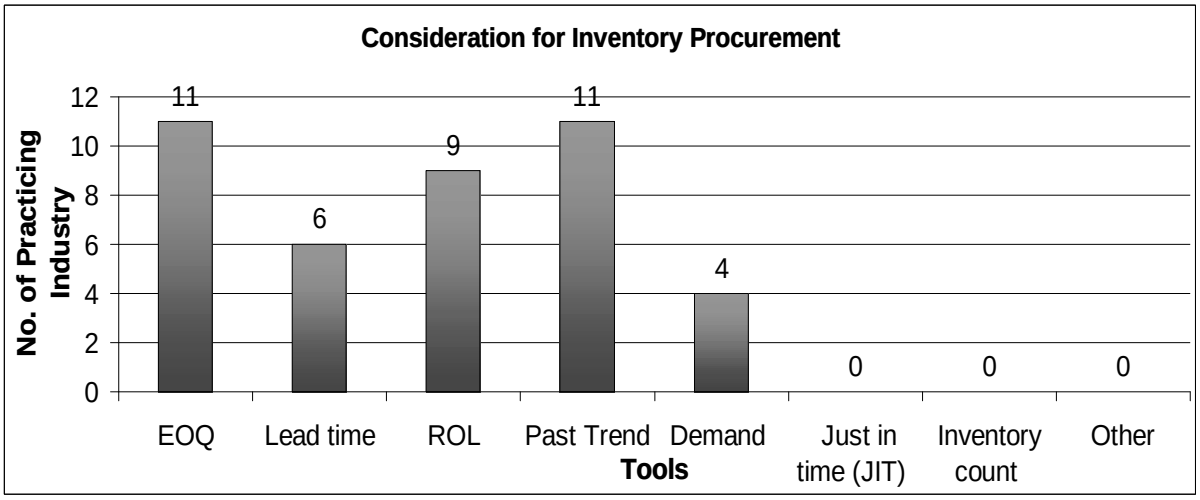
Table-4.15

S.N.	Tools	No of Population Industry	No. of sample industry	No of practicing industry	Percentage (%)
1	Economic order quantity (EOQ)	75	15	11	73
2	Lead time	75	15	6	40
3	Reorder level (Min stock level)	75	15	9	60
4	Consumption rate (Past trend)	75	15	11	73
5	Demand /Order place by customer	75	15	4	27
6	Just in time (JIT) philosophy	75	15	0	0
7	Inventory count (Period model)	75	15	0	0
8	Other	75	15	0	0

(Source: Appendix-11)

73% (11 out of 15) of industries are practicing Economic order quantity (EOQ), while Lead-time is practicing just 40% industries. Similarly, 60% industries are considering Minimum stock level where Consumption rate is taken into consideration by 73% while procuring the inventory. Order place by customer is also counted by 27% of industries

Fig-4.7



Just in time (JIT) philosophy and Inventory count methods are not taken into consideration by any one of the industry while making procurement of inventory.

4.15 Transfer Pricing

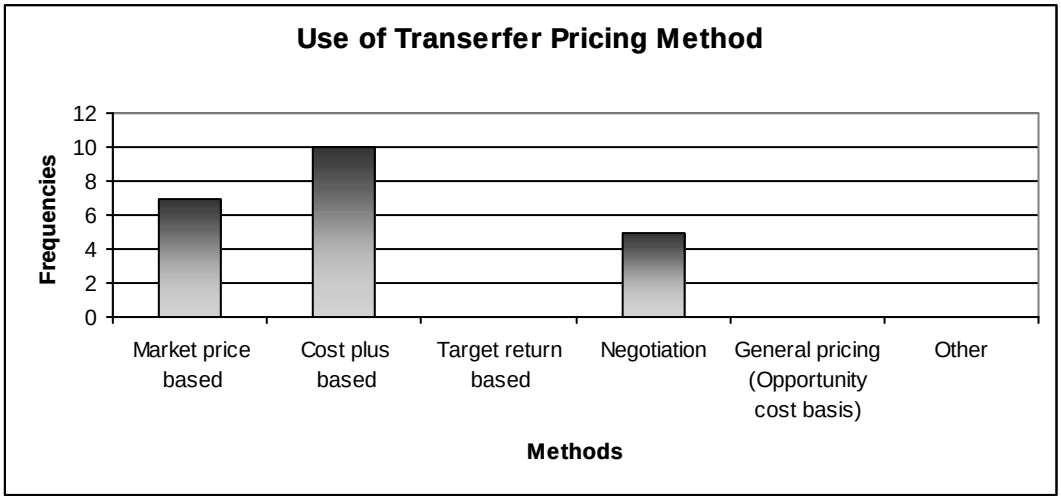
Table-4.16

S.N.	Transfer pricing method	No of Population Industry	No. of sample industry	No of practicing industry	Percentage (%)
1	Market price based	75	15	7	47
2	Cost plus based	75	15	10	67
3	Target return based	75	15	0	0
4	Negotiation	75	15	5	33
5	General pricing (Opportunity cost basis)	75	15	0	0
6	Other	75	15	0	0

(Source: Appendix-12)

Transfer price is the price to be charged by the product providing department to the receiving department. 47% of sample industries practicing market price based method where as 67% of them practicing cost price based transfer pricing. Negotiation method is used by 33% of industries for transfer pricing.

Fig-4.8



None of them is using target return based and opportunity cost basis transfer pricing.

4.16 Difficulties in Application of Management Accounting Tools in Industries

In response of aforesaid question , the majority of the respondents: Financial controllers, and/or Account officers agree upon the fact that management accounting tools are to be essentially applied in every industry for accurate and timely decision making, quality control and cost control. Even though, the respondents see the aforementioned benefits, they also see the various causes, which are creating the problem regarding the application of management accounting tools in industries. Of them, the major difficulties are lack of expertise knowledge, lack of industry data, no proper standard for industry and lack of willingness of top management. Except these, some other difficulties shown by the respondents are;

- Cost and time factor
- Lack of knowledge about tools
- Unavailability of timely and accurate information
- Lack of computerized system to gather data and consolidate them for producing information.
- Lack of competent staff
- Psychological resistance
- Lack of information technology
- Ignorance of management, etc.

4.17 Potential Benefits of Management Accounting Tools in Industries

- Effective/quick decision making and control
- Accurate Data finding
- Budget controlling
- Effective Control
- Proper planning
- Higher profitability
- Better risk management
- Help to find deviation, consistency and uniformity
- Reduction in cost

For proper planning, effective control and judicious decision making management accounting is very important. Management accounting tools are powerful weapons to survive in competitive market and lead the organization towards success. Industries opined that management accounting helps in accurate data finding, proper planning, budget controlling and effective decision-making.

The desirability of any particular managerial accounting technique or information must be determined in the light of its costs-benefits analysis. The cost of providing managerial accounting information includes the cost of compensation for the controller and accounting department personnel, the cost of purchasing and operating computers, and the costs of time spent by the information users to read understand, and utilize information. The benefits include the above-mentioned points such as; improved decisions, more effective planning, and greater efficiency of operations at lower costs, and better directions and control of operations.

4.18 Testing of Hypothesis

Testing of hypothesis for Standard Costing

Null hypothesis (Ho):- There is no significant difference between Public Limited Companies and Private Limited Companies in practice of Standard Costing Analysis

Alternative hypothesis (H_1):-There is significant difference between Public Limited Companies and Private Limited Companies in practice of Standard Costing Analysis.

Test statistics: Under H0:

For 2×2 contingency table,

$$¡^2 = \frac{N(ad-bc)^2}{(a+b)(c+d)(a+c)(b+d)}$$

Where, N= Total no. of observation.

2 × 2 contingency table

Practice of Standard Costing	Industries		Row Total
	Public	Private	
Yes	a = 3	b = 11	a+b = 14
No	c = 0	d = 1	c+d =1
Column Total	a+c =3	b+d = 12	N = 15

Since, frequencies of cell a, c and d are less than 5, Yates correction formula for calculating $¡^2$ should be applied. For this purpose, 0.5 is to be added to the cell frequencies which are less than 5 (they are a,c and d) and accordingly remaining frequency should be adjusted fixing row total and column total. Thus, the adjusted 2 × 2 contingency table will be as follows:

Adjusted 2 × 2 contingency table

Practice of Standard Costing	Industries		Row Total
	Public	Private	
Yes	a = 3.5	b = 10.5	a+b = 14
No	c = 0.5	d = 0.5	c+d =1
Column Total	a+c =4	b+d = 11	N = 15

$$Now, \chi^2 = \frac{15X(3.5X0.5 - 10.5X0.5)^2}{14X1X4X11}$$

= 0.298

Degree of freedom: (r-1) (c-1) = (2-1) (2-1) = 1

Tabulated value of χ^2 at 0.05 for 1 degree of freedom is 3.84 i.e., $\chi^2_{0.05,1} = 3.84$

Decision: since calculated value of χ^2 (i.e. 0.298) is less than tabulated $\chi^2_{0.05,1}$ null hypotheses is accepted. Hence, it can be concluded that there is no significant difference between group of industries (Public and Private) and practice of Standard Costing.

Hypothesis testing for Activity Based Costing (ABC)

Null hypothesis (Ho):- There is no significant difference between Public Limited Companies and Private Companies in use of Activity Based Costing (ABC)

Alternative hypothesis (H_1):-There is significant difference between Public Limited Companies and Private Companies in use of Activity Based Costing (ABC)

Test statistics: Under H0:

For 2×2 contingency table,

$$\chi^2 = \frac{N(ad-bc)^2}{(a+b)(c+d)(a+c)(b+d)}$$

Where, N= Total no. of observation.

2 × 2 contingency Table

Practice of ABC	Industries		Row Total
	Public	Private	
Yes	a = 2	b =5	a+b = 7
No	c = 1	d = 7	c+d =8
Column Total	a+c =3	b+d = 12	N = 15

Since, frequencies of cell a and c are less than 5, Yates correction formula for calculating $¡^2$ should be applied. For this purpose, 0.5 is to be added to the cell frequencies that are less than 5 and accordingly remaining frequency should be adjusted fixing row total and column total. Thus, the adjusted 2 × 2 contingency table will be as follows:

Adjusted 2 × 2 contingency Table

Practice of ABC	Industries		Row Total
	Public	Private	
Yes	a = 2.5	b =4.5	a+b = 7
No	c = 1.5	d = 6.5	c+d =8
Column Total	a+c =4	b+d = 11	N = 15

$$Now, ¡^2 = \frac{15X(2.5X6.5 - 4.5X1.5)^2}{7X8X4X11}$$

= 0.549

Degree of freedom: (r-1) (c-1) = (2-1) (2-1) = 1

Tabulated value of $¡^2$ at 0.05 for 1 degree of freedom is 3.84 i.e., $¡^2_{0.05,1} = 3.84$

Decision: since calculated $¡^2$ is less than tabulated $¡^2_{0.05,1}$ null hypothesis is accepted. Hence, it can be concluded that there is no significant difference between group of industries (Public and Private) and practice of ABC.

4.19 Major Research Findings:

On the basis of comprehensive analysis of information and data the major research findings are identified as follows:

- When differentiating the sample industries into public and private limited, Three out of Fifteen Industries are registered as Public Limited and the remaining Twelve are registered as Private Limited. It is seen that private limited companies are in great number in the Balaju Industrial Estate when comparing to the Public Limited Companies.
- While analyzing the application of management accounting tools in listed industries of Balaju Industrial Estate for planning, controlling and decision-making, it is found that all the industries under selection practice Capital Budgeting, BEP Analysis, Responsibility Accounting, Cash Flow Estatement and Lease or Buy technique .93% of industries applied Cost Segregation into Fixed and Variable. Similarly, 93% of them use Tax effect analysis and Standard Costing. 67% of them use Financial Estatement Analysis and 33% use the Master budgeting. Similarly, 40 % of them use Flexible Budgeting. 47% of them use Activity Based Costing and just 7% of them use Zero-based Budgeting.
- The student's t test revealed that the average numbers of accounting tools practicing industries are 10 out of 13 tools. The test concluded that the selected industries are practicing not below 10 out of 13 management accounting tools.
- All the sample industries accepted only two reasons for not practicing the management accounting tools; those were not relevant and not felt necessary yet. They did not think they lack information and expertise, nor they agreed the time and cost as the cause of not practicing these management accounting tools.
- The industries are aware of importance of information technology IT. All the industries (15 out of 15) are using professional accounting software. 47% of industries are practicing manual accounting side by side with the other professional software. 7% of them have their own internal IT developed system.

- With regard to cost segregation, only three industries (20%) are applying high low point method to segregate mix cost into variable and fixed cost. The most accurate method namely Regression method is in practice only in two industries. The graphical method is not in practice at all. 60% of industries practiced Average method and 80% of them practiced Analysis method to segregate mixed cost into variable and fixed cost.
- To prepare budget, 87 % of industries apply past budget as reference when preparing a new budget. Similarly, Historical actual data are taking in consideration by 85 % of industries. Only 7 % of industries practicing Zero based budgeting whereas 27 % of them practicing Activity Based Budgeting and 53 % of them considering Target Set when preparing a new budget. The majority of industries are using multiple methods rather than one.
- With respect to type of budget, 20% of sample industries practice overall master budget, Where as 60% of them practice operational budget. Long-term budget is practicing just 7% of the industries. The majority of the industries are applying annual budget system i.e., 80% where as 20% of sample industries following cash budget. Many of the industries are applying two or more than two types of budget system simultaneously.
- The sample industries have no separate budget committee. Budget is prepared mostly by Top Management. In 93% (14 out of 15) of industries budget is prepared by Top Management. Along with Top management, Departmental managers prepare budget in seven industries. In Dairy Development Corporation budget is prepared by planning department. In terms of percentage, in 33% of industries, the departmental managers prepare budget, where as Planning Department and Outside Experts are engage in 7 percent of the industries in making of their budget.
- With respect to time period covered in budget, all most all of industries practicing Short Term (one year or less) Budget.14 out of 15 industries are applying Short Term where as only one industry (Bottlers Nepal Ltd.) practicing Long Term budget (Five years or more).

- All of the sample industries apply Payback Period as an evaluating tool while making long-term investment. Similarly the percentage of industries practicing Average rate of return and Net Present Value for analyzing capital budgeting is 80 % and 87 % respectively. In addition, the Profitability Index is applying by the majority of the industries. Internal Rate of Return and Discounted Payback Period are used for evaluating long-term investment by merely 7% of the sample industries.
- In average three capital budgeting tools are practiced by selected sample industries. 13 % of industries are practicing below the average no. of capital budgeting tools while 33% of them practice exactly the average number of tools. 54 % industry use more than the average number capital budgeting tools.
- To determine price, 93% of industries following full costing based pricing while market rate is taken into consideration by 87 % industries when fixing price of their product. Variable cost is counted by 13% of industries while 7% of them follow activity based costing pricing.
- To measure and control the overall performance, nearly 93% of industries are practicing profit or loss made by the industry. Similarly, 60%, 53%, 40% and 27% of them respectively practice Budgetary Control, Financial Estatement Analysis, Cash flow Analysis and Standard Costing to evaluate overall performance. Only 13% of industries are using Activity based costing technique to measure and control the performance.
- In average three techniques are practiced to measure and control overall performance by sample industries at the end of the year. 47% industries use below average no. of measuring techniques, while 26% of them use exactly average no. of tools. Again 27% of them practice more than the average no. of techniques to measure and control overall performance.
- Almost all industries forecast the cost and revenue on the basis of past trend analysis. Along with the past trend analysis, market survey was also used by majority of the industries. In term of percentage, past trend, analysis is used by 93% (14 out of 15) and market survey is used by 60% (13 out of 15) industries.

Judgmental analysis is practiced only by 20%. Modern techniques Zero Based Budgeting (ZBB) is practice by only one industry.

- For costing of issue of inventory, most of the industries followed first in first out (FIFO) method except two industries. Balaju Yantrashala is practicing last in first out (LIFO) method and Bottlers Nepal following weighted average method. Simple average method is also in practice in some industries simultaneously with FIFO method for pricing the issued inventory.
- For transfer pricing, 47% of sample industries practicing market price based method where as 67% of them practicing cost price based transfer pricing. Negotiation method is used by 33% of industries for transfer pricing. None of them is using target return based and opportunity cost basis transfer pricing.
- Main problem in application of management accounting tools in their own words are cost factor, lack of industrial data, no proper standard. In context of Nepal there is no proper information bank and no specialized institution to do research in this industrial sector.
- Potential benefits of management accounting tools in their own words are quick/effective decision-making, budget controlling and proper planning.

Hypothesis findings

- Testing of hypothesis relating to practice of Standard Costing and the ownership of industry, it is found that there is no significant relationship between the ownership of industry and the practice of Standard Costing as a management accounting tool i.e. the ownership of industry and the practice of Standard Costing are independent. In other words, no matter how an industry is private or public, each industry is independent with respect to practice of Standard Costing.

- Testing of hypothesis relating to practice of Activity Based Costing (ABC) and the ownership of industry, it is found that there is no significant relationship between the ownership of industry and the practice of ABC as a management accounting tool i.e. the ownership of

industry and the practice of ABC are independent. Further more, no matter how an industry is private or public; each industry is independent with respect to practice of ABC.

CHAPTER-V
Summary, Conclusion and Recommendations

5.1 Summary

Management is the art of getting things done through and with people by using the means of planning, organizing, staffing, directing and controlling to achieve organizational goal effectively in a dynamic environment. Management has to concentrate its activities on the mobilization of organization's available scarce resources in effective and efficient manner. Managerial skills and competencies are keys for organizational success. Managers play a significant role in facilitating organizational effectiveness. Management principles can be applied in all organizations and at all levels of an organization. It is equally important for the organization whether it is public or private.

Industries that carry out the economic activities are the backbone of the economy. Their activities create impact on the economy in one way or the other. Every industry has limited resources which should be mobilized in such way that it can get its best. For better mobilization of resources; different tools and techniques have been developed. Among them, management accounting tools have been proved beneficial in different aspects of managerial activities. Cost Segregation, Capital Budgeting, Break-even Analysis, Responsibility Accounting, Cash flow Statements, financial Statements Analysis, Standard Costing, Zero-Based Budgeting, Activity Based Costing and Master Budgeting are the major tools of managerial accounting.

Management accounting is one of the important disciplines of management. It is the branch of accounting whose main objective is to help managers in overall managerial activities by providing various information and assisting in planning, controlling and decision making. Managerial accounting acts as a strategic business partner in support of managerial role in rational decision making. Management accounting has wide scope of application whether the business is manufacturing or trading.

The study has been conducted with an objective to examine the present practice of management accounting tools in medium and large scale industries and to identify the area where management accounting tools can be applied. With respect to this objective, the present research has discovered the real position of applicability of management accounting tools in

Nepalese industrial sector, expected benefits to be achieved through the application of these tools, and the impact if application of these tools were not made in industries.

For conducting the research, survey type research design has been adopted with descriptive, analytical and comparative approach. The research is mostly based on primary source of information. Secondary source of data have also been used as per needed. The data have been collected from the respective industry by distributing scheduled questionnaire and conducting table talks. 15 industries out of 75 have been used as sample by using stratified judgmental sampling procedure. The raw data have been properly processed, tabulated into comparative tabular form and analyzed with percentage analysis, t-test and chi-square test.

The research revealed that cost segregation into fixed and variable cost, responsibility accounting, tax effect analysis, standard costing, lease or buy and cash flow were widely practiced by industries. Likewise, capital budgeting, activity based costing (ABC) and cost volume profit (CVP) analysis were also practiced by most of industries. Flexible budgeting, target costing, master budgeting were practiced by few industries. Practice of Zero based budgeting (ZBB), Regression analysis, value engineering were almost nil. Thinking not necessary and not relevant was the main reasons for not practicing these management accounting tools. Many of the industries using professional accounting systems; many of them have their own internal Information Technology (IT) department.

The hypothesis analysis helped to conclude that industries are practicing not below than ten management accounting tools. Similarly there was no significant difference between public limited companies and private limited companies in practice of Standard Costing and Activity Based Costing (ABC).

5.2 Conclusion

There are many management accounting tools developed to improve performance of business organization. But industries are not practicing all of them. Rather they are confining their practice to financial accounting and cost accounting. They didn’t feel necessary to go beyond these financial accounting and cost accounting. So there exists gap between theory and practice. Practice of regression analysis, zero based budgeting (ZBB), value engineering were almost nil. Even capital budgeting, break even analysis, flexible budgeting, responsibility accounting, activity based costing (ABC), lease or buy were partially practiced.

It revealed that industries have no awareness of importance of these tools rather they were following the rules of thumb. Taking decision in vacuum may have long term impact which would be costly to change after put into effect.

The critical problems in industries to apply management accounting tools are lack of expert manpower, lack of industrial data and proper standard. In Nepalese context, there is no specialized organization/institution yet, to formulate standard and research on this sector. Result oriented information on micro level is not available easily, so industries have to gather required information on their own initiation and cost.

Hiring of outside expert is an effective method to solve the problem and apply new management accounting tools effectively. Likewise giving training to staff is also important. But these practices were rarely found in industries. They were confined to financial accounting, cost accounting and traditional reporting. Hiring of outside expert, may identify the effective way of using management accounting tools, areas to apply new techniques etc. Only applying the technique is not adequate, effective and result oriented application is admirable. Value engineering, Just in time (JIT), Zero based budgeting (ZBB), target costing, responsibility accounting, Activity based costing (ABC) are evolved in global perspective to improve performance of the business organization. But due to lack of awareness these tools are less in practice.

5.3 Recommendations

Business needs to operate in an open system, where every external/internal factor affects on its operation, of which some may be out of control. Best fit managerial strategies should be applied in the global perspective. As managerial functions are not programmable and non clerical, timely updated external/internal data are essential. The information is most powerful weapon to sustain in competition and basis to make decision. Judicious use of limited resources, application of modern accounting tools helps to achieve the organization goal. On the basis of the research following recommendations are suggested:

- Timely updated information is needed for proper planning and decision making. But in Nepal there is no specialized institution to provide industrial information. So it is recommended to set up own network of management accounting information system

(MAIS), with integrated effort of internal/external IT experts. Proper scanning of needed information and dissemination should be done.

- Industries should not rely on rules of thumb. Because profit does not happen by chance. Rather it should be planned/managed and tracked to own favor. Traditional methods are not sufficient to cope with dynamic and competitive environment. Innovative and new sophisticated method should be applied otherwise one have to lag behind far away. Management accounting should be practiced in every pace of planning, controlling and decision making. For planning capital budgeting, flexible budgeting, break even analysis, linear programming (LP), tax effect analysis, activity based budgeting (ABB), zero based budgeting (ZBB) should be used. For controlling Standard costing, responsibility costing, variance analysis, budgetary control, financial statement analysis, cost benefit analysis, activity based costing (ABC) are recommended. Similarly, Japanese Kiezen system, total quality management, management audit and bench marking also should be practiced.
- To segregation cost into fixed and variable, regression method is the most accurate and scientific statistical method. But most of industries are practicing only high low method, average and analysis method. So it is recommended to apply modern technique like regression.
- While preparing budget, environmental factors are also should be considered along with past budgets, target set and historical data. Events do not always follow the historical trend so ZBB is also recommended to practice with detailed analysis of environmental factors.
- For budgeting and planning it is recommended to take help of professional experts.
- Strategic thinking and long term vision is necessary to achieve goal. Along with tactical plan, strategic plan covering more than ten years also should be planned.
- Project evaluation/capital budgeting is irreversible decision. It should be done with full information and detailed analysis. For this purpose mostly NPV should be used.
- For pricing products, multifactor should be considered. Only cost basis is not enough. Activity based costing, market rate, target return, marginal cost analysis etc also should be considered.

- Measure and control of overall performance should be done with multi basis. Some of the industries relying on only single factor like profit and loss and financial statement. All the relevant factors like profit and loss, budget control, variance analysis, financial statement, activity based costing, responsibility accounting should be considered.
- For forecast/estimate the cost/revenues past trend analysis is definitely an effective tool. But future is uncertain. So environmental analysis is necessary. ZBB market survey should be done to solve the possible changes in the future.
- Limited resources have multi use and have opportunity cost. Overstocking makes money tied up in stock depriving from many good opportunities. So stock level should be optimum. For controlling both total value and quantity should be considered. If possible the characteristics of particulars item should be identified and categorized as per ABC analysis. Then on the basis of vital few and trivial many, inventory control should be done. The maximum and minimum level determination helps to control stock with in relevant range.
- Transfer pricing should be done considering goal congruence. Negotiation and general transfer pricing rule is suitable but not in practice. So it is recommended to apply these techniques.
- Industries should develop trend of taking help of management consultancy/external expert. If possible separate management accounting management department should be established. Otherwise managers should be trained and motivated to apply modern technique of management accounting tools. Interaction between management accounting experts and industries is appreciable to reduce gap between theory and practice. Short term training-seminars and long term training will be effective to shed light on application and importance of management accounting tools.

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Questionnaire

This questionnaire has been forwarded to you for researcher's undergoing research work, entitled, ***"Management Accounting Practice in Listed Industries of Balaju Industrial Estate***", in partial fulfillment of the requirement for the degree of Master of Business Studies (MBS). So you are kindly requested to tick (√) the alternative answers for each question concerning your reputed organization.

❖ *Please specify type of ownership of your organization.*

a) Sole Trading [ ]
b) Partnership [ ]
c) Joint Stock
i) Public Limited [ ]
ii) Private limited [ ]
d) Others, please specify _

1. Would you kindly specify which of the following mentioned management accounting tools are practiced in your organization?

SN	Management Accounting Tools	Tick mark (√)
1	Capital Budgeting	
2	Cost Segregation into Fixed and Variable	
3	Tax Effect Analysis	
4	Standard Costing	
5	Break Even Analysis (BEP)/Cost-Volume-Profit (CVP) Analysis	
6	Ratio Analysis/Financial Statement Analysis	
7	Master Budgeting	
8	Flexible Budgeting	
9	Responsibility Accounting	
10	Activity Based Costing (ABC)	
11	Cash Flow Statement	
12	Zero Based Budgeting	
13	Lease or Buy	

2. If your organization has not practiced any of the above mentioned tools, what might be the reason?

a) Not relevant to our organization [ ]
b) Not felt necessary yet [ ]
c) Cost factor [ ]
d) Lack of information [ ]
e) Lack of Expertise [ ]

d) Other, if any _

3. What kind of System do you have in your organization to support managerial operation for planning, controlling and decision-making?

a) Professional Accounting Software [ ]
b) Internal IT developed System [ ]
c) Manual [ ]
d) Other, if any _

4) What Technique does your organization use to segregate the mixed cost into variable and fixed?

a) High-low point method [ ]
b) Regression method [ ]
c) Graphical method [ ]
d) Average Method [ ]
e) Analysis method [ ]
f) Other, if any _

5. On what basis does your organization prepare budget?

a) Past budget [ ]
b) Historical/Past Data [ ]
c) Zero Based Budgeting [ ]
d) Activity Based Budgeting [ ]
e) Target Set [ ]
f) Other, if any _

6) What type of budget does your organization practice?

a) Overall Master budget [ ]
b) Operational budget only [ ]
c) Long term budget [ ]
d) Annual budget [ ]
e) Cash budget only [ ]
f) Other, if any _

7) Who is responsible to prepare the budget in your organization?

a) Separate Budget Committee [ ]
b) Top Management [ ]
c) Planning Department [ ]
d) Departmental Managers/Incharge [ ]
e) Outside Experts [ ]

f) Other, if any _

8) What is the time frame of the budget prepared your organization?
a) Short Term (one year or less) [ ]
b) Med-term (between one and five years) [ ]
c) Long Term (Five years and more) [ ]
d) Other, if any _

9) Which capital budgeting tools are used in your organization, while making long-term investment or purchasing fix assets?
a) Payback period (PBP) [ ]
b) Average rate of return (ARR) [ ]
c) Net present value (NPV) [ ]
d) Internal rate of return (IRR) [ ]
e) Profitability index (PI) [ ]
f) Discounted Payback period (DPBP) [ ]
g) Other, if any _

10) Which technique does your organization practice for pricing products/services?
a) Full Costing-Based Pricing (Absorption) [ ]
b) Variable Cost [ ]
c) Market Rate [ ]
d) Target return on investment (ROI) [ ]
e) Activity based costing pricing [ ]
f) Pre-determined commission (percentage) [ ]
g) Other, if any _

11) How does your organization measure and control the overall performance at the end of the accounting year?
a) Profit/loss [ ]
b) Budgetary control [ ]
c) Standard costing [ ]
d) Financial statement analysis [ ]
e) Cash flow analysis [ ]
f) Activity based costing [ ]
g) Other, if any _

12) Which technique does your organization practice for forecast/estimate the costs and revenues for the futures?
a) Past trend analysis [ ]

b) Zero based budgeting [ ]
c) Market survey [ ]
d) Judgmental Analysis [ ]
e) Other, if any _

13) Which method is followed for pricing the issued of inventory in your organization?
a) First in first out (FIFO) [ ]
b) Last in last out (LIFO) [ ]
c) Weighted average [ ]
d) Simple average [ ]
e) Other, if any _

14) What things does your organization consider while procuring inventory?
a) Economic order quantity (EOQ) [ ]
b) Lead time [ ]
c) Reorder level (Min stock level) [ ]
d) Consumption rate (Past trend) [ ]
e) Demand/order place by customer [ ]
f) Just in time (JIT) philosophy [ ]
g) Inventory Count (Period model) [ ]
h) Other, if any _

15) On what basis does your organization control inventory?
a) Total value basis [ ]
b) Total quantity basis [ ]
c) Characteristics of particularly item [ ]
d) ABC analysis [ ]
e) Other, if any _

16) Which transfer pricing technique is practiced in your organization?
a) Market price based [ ]
b) Cost price based [ ]
d) Target return based [ ]
e) Negotiation [ ]
f) General Pricing (Opportunity cost basis) [ ]
f) Other, if any _

17) Which technique does your organization practice to allocate joint (mixed) departmental cost?
a) Sales Unit [ ]
b) Sales revenue [ ]

c) Negotiation [ ]
d) Other, if any _
_ _

18) What are the main factors, which affects to the major accounting related to decision-making process in your organization?
a) Management Accounting Tools [ ]
b) Objective of Organization [ ]
c) Decision of top management [ ]
d) Advise of Vendor [ ]
e) Other, if any _
_ _

19) Please specify the major difficulties for the application of Management Accounting tools and techniques in your organization
a) _
b) _
c) _
d) _
e) _
f) _

20) Please specify the potential benefits of Management Accounting for your organization
a) _
b) _
c) _
d) _
e) _
f) _

Date _ _ _ _ _ _ _ Seal of the Organization

Name of Organization _ _ _ _ _ _ _ _ _ _ _ _ _
Designation of respondent _ _ _ _ _ _ _ _ _ _ _ _ _
Name (optional) _ _ _ _ _ _ _ _ _ _ _ _ _
Signature _ _ _ _ _ _ _ _ _ _ _ _ _

Appendix-1 Use of Management Accounting Tools in Sample Industries of Balaju Industrial Estate.

Tools		Capiatl Budgeting	Cost Segregation into Fixed Variable	Tax Effect Analysis	Standard Costing	BEP Analysis	Ratio Analysis	Master Budgeting	Flexible Budgeting	Responsibility Accounting	Activity Based Costing	Cash Flow State
S. N.	Industries											
1.	Aqua Minerals Nepal Pvt. Ltd.	1	1	1	1	1	1	1	1	1	_	1
2.	Balaju Yantra Shala Pvt. Ltd	1	1	1	1	1	1	_	1	1	1	1
3.	Bottlers Nepal Ltd.	1	1	1	1	1	1	1	1	1	1	1
4.	Dairy Develop Corporation	1	1	1	1	1	1	1	_	1	1	1
5.	Hilltake Industries	1	1	1	1	1	1	1	_	1	1	1
6.	Himali Bakery Pvt. Ltd	1	1	1	1	1	_	_	_	1	_	1
7.	Kathmandu Flour Mill	1	1	1	_	1	_	_	_	1	1	1
8.	Nebico Pvt. Ltd	1	1	1	1	1	1	1	1	1	1	1
9.	Nepal Tent and Tarpaulin	1	1	1	1	1	1	_	_	1	1	1
10.	Nepal Film Dev Company Ltd	1	1	1	1	1	1	_	1	1	_	1
11.	Nepal Poly Pipe Pvt. Ltd	1	1	1	1	1	_	_	_	1	_	1
12.	Nepal Gas Udyog Pvt. Ltd	1	1	1	1	1	1	_	_	1	_	1
13.	Plastic Industries	1	1	1	1	1	1	_	1	1	_	1
14.	Shakya Aluminium	1	1	1	1	1	_	_	_	1	_	1
15.	Shanker Oxygen Gas	1	_	_	1	1	_	_	_	1	_	1
Industries Total		15	14	14	14	15	10	5	6	15	7	15

(-) not practiced
(1) Practiced

Appendix- 2

IT system used in Industries to Support Managerial operation

Tools		Professional Accounting Software	Internal IT Developed System	Manual	Others	Tools Total
S. N.	Industries					
1.	Aqua Minerals Nepal Pvt. Ltd.	1	–	–	–	1
2.	Balaju Yantra Shala Pvt. Ltd	1	–	–	–	1
3.	Bottlers Nepal Ltd.	1	–	–	–	1
4.	Dairy Develop Corporation	1	1	–	–	2
5.	Hilltake Industries	1	–	–	–	1
6.	Himali Bakery Pvt. Ltd	1	–	1	–	2
7.	Kathmandu Flour Mill	1	–	1	–	2
8.	Nebico Pvt. Ltd	1	–	–	–	1
9.	Nepal Tent and Tarpaulin	–	–	1	–	1
10.	Nepal Film Dev Company Ltd	1	–	–	–	1
11.	Nepal Gas Udyog Pvt. Ltd	1	–	–	–	1
12.	Nepal Poly Pipe Pvt. Ltd	1	–	1	–	2
13.	Plastic Industries	1	–	1	–	2
14.	Shakya Aluminium	1	–	1	–	2
15.	Shanker Oxygen Gas	1	–	1	–	2
Industries Total		14	1	7	0	22

(-) not practiced

(1) Practiced

Appendix- 3

Techniques used in Industry to segregate mixed cost into fixed and variable.

Tools		High Low Point Method	Regression Method	Graphical Method	Average Method	Analysis Method	Other	Tools Total
S. N.	Industries							
1.	Aqua Minerals Nepal Pvt. Ltd.	_	_	_	1	_	_	1
2.	Balaju Yantra Shala Pvt. Ltd	1	1	_	_	_	_	2
3.	Bottlers Nepal Ltd.	1	_	_	_	1	_	2
4.	Dairy Develop Corporation	1	1	_	_	_	_	2
5.	Hilltake Industries	_	_	_	1	1	_	2
6.	Himali Bakery Pvt. Ltd	_	_	_	_	1	_	1
7.	Kathmandu Flour Mill	_	_	_	1	1	_	2
8.	Nebico Pvt. Ltd	_	_	_	1	1	_	2
9.	Nepal Tent and Tarpaulin	_	_	_	1	1	_	2
10.	Nepal Film Dev Company Ltd	_	_	_	1	1	_	2
11.	Nepal Gas Udyog Pvt. Ltd	_	_	_	1	1	_	2
12.	Nepal Poly Pipe Pvt. Ltd	_	_	-	1	1	_	2
13.	Plastic Industries	_	_	_	1	1	_	2
14.	Shakya Aluminium	_	_	_	_	1	_	1
15.	Shanker Oxygen Gas	_	_	_	_	1	_	1
Industries Total		3	2	0	9	12	0	26

(-) not practiced
(1) Practiced

Appendix- 4

Basis for preparation of budget in the Industries

Tools		Past Budget	Historical Data	Zero Based Budgeting	Activity Based Budgeting	Target Set	Other	Tools Total
S. N.	Industries							
1.	Aqua Minerals Nepal Pvt. Ltd.	1	1	_	_	1	_	3
2.	Balaju Yantra Shala Pvt. Ltd	_	_	1	_	_	_	1
3.	Bottlers Nepal Ltd.	_	_	_	_	1	_	1
4.	Dairy Develop Corporation	1	1	_	1	1	_	4
5.	Hilltake Industries	1	1	_	_	1	_	3
6.	Himali Bakery Pvt. Ltd	1	1	_	_	1	_	3
7.	Kathmandu Flour Mill	1	1	_	_	_	_	2
8.	Nebico Pvt. Ltd	1	1	_	1	1	_	4
9.	Nepal Tent and Tarpaulin	1	1	_	1	_	_	3
10.	Nepal Film Dev Company Ltd	1	1	_	1	_	_	3
11.	Nepal Gas Udyog Pvt. Ltd	1	1	_	_	_	_	2
12.	Nepal Poly Pipe Pvt. Ltd	1	_	_	_	_	_	1
13.	Plastic Industries	1	1	_	_	1	_	3
14.	Shakya Aluminium	1	1	_	_	_	_	2
15.	Shanker Oxygen Gas	1	_	_	_	1	_	2
Industries Total		13	11	1	4	8	0	37

(-) not practiced

(1) Practiced

Appendix- 5

Type of budget practiced by industries

Budget Type		Overall Master Budget	Operational Budget	Long Term Budget	Annual Budget	Cash Budget	Other	Tools Total
S. N.	Industries							
1.	Aqua Minerals Nepal Pvt. Ltd.	1	1	_	1	_	_	3
2.	Balaju Yantra Shala Pvt. Ltd	_	1	_	_	_	_	1
3.	Bottlers Nepal Ltd.	_	_	1	1	_	_	2
4.	Dairy Develop Corporation	1	1	_	1	_	_	3
5.	Hilltake Industries	_	_	_	1	_	_	1
6.	Himali Bakery Pvt. Ltd	_	1	_	1	_	_	2
7.	Kathmandu Flour Mill	_	_	_	1	_	_	1
8.	Nebico Pvt. Ltd	1	1	_	1	1	_	4
9.	Nepal Tent and Tarpaulin	_	1	_	1	_	_	2
10.	Nepal Film Dev Company Ltd	_	1	_	1	_	_	2
11.	Nepal Gas Udyog Pvt. Ltd	_	1	_	_	_	_	1
12.	Nepal Poly Pipe Pvt. Ltd	_	_	_	1	_	_	1
13.	Plastic Industries	_	1	_	1	1	_	3
14.	Shakya Aluminium	_	_	_	1	_	_	1
15.	Shanker Oxygen Gas	_	_	_	_	1	_	1
Industries Total		3	9	1	12	3	0	28

(-) not practiced

(1) Practiced

Appendix- 6

Responsible parties involved in budget preparation system in Industries

Responsible Parties		Separate Budget Committee	Top Management	Planning Department	Depratmental Managers	Outside Experts	Other	Tools Total
S. N.	Industries							
1.	Aqua Minerals Nepal Pvt. Ltd.	_	1	_	1	_	_	2
2.	Balaju Yantra Shala Pvt. Ltd	_	1	_	1	1	_	3
3.	Bottlers Nepal Ltd.	_	1	_	1	_	_	2
4.	Dairy Develop Corporation	_	_	1	_	_	_	1
5.	Hilltake Industries	_	1	_	_	_	_	1
6.	Himali Bakery Pvt. Ltd	_	1	_	_	_	_	1
7.	Kathmandu Flour Mill	_	1	_	_	_	_	1
8.	Nebico Pvt. Ltd	-	1	_	1	_	_	2
9.	Nepal Tent and Tarpaulin	_	1	_	_	_	_	1
10.	Nepal Film Dev Company Ltd	_	1	_	_	_	_	1
11.	Nepal Gas Udyog Pvt. Ltd	_	1	_	1	_	_	2
12.	Nepal Poly Pipe Pvt. Ltd	_	1	_	_	_	_	1
13.	Plastic Industries	_	1	_	_	_	_	1
14.	Shakya Aluminium	_	1	_	_	_	_	1
15.	Shanker Oxygen Gas	_	1	_	_	_	_	1
Industries Total		0	14	1	5	1	0	21

(-) not practiced
(1) Practiced

Appendix- 7

Capital budgeting toolspracticed in long term investment decision in Industries

Tools		Payback Period (PBP)	Average rate of Return (ARR)	Net present Value (NPV)	Internal rate of Return (IRR)	Profitability Index (PI)	Discounted Payback period (DPBP)	Tools Total
S. N.	Industries							
1.	Aqua Minerals Nepal Pvt. Ltd.	1	1	1	_	1	_	4
2.	Balaju Yantra Shala Pvt. Ltd	1	_	1	_	_	_	2
3.	Bottlers Nepal Ltd.	1	1	1	1	_	1	5
4.	Dairy Develop Corporation	1	1	1	_	1	_	4
5.	Hilltake Industries	1	1	1	_	_	_	3
6.	Himali Bakery Pvt. Ltd	1	_	_	_	1	_	2
7.	Kathmandu Flour Mill	1	1	1	_	1	_	4
8.	Nebico Pvt. Ltd	1	1	1	_	1	_	4
9.	Nepal Tent and Tarpaulin	1	1	_	_	1	_	3
10.	Nepal Film Dev Company Ltd	1	1	1	_	1	_	4
11.	Nepal Gas Udyog Pvt. Ltd	1	1	1	_	1	_	4
12.	Nepal Poly Pipe Pvt. Ltd	1	1	1	_	_	_	3
13.	Plastic Industries	1	1	1	_	1	_	4
14.	Shakya Aluminium	1	_	1	_	1	_	3
15.	Shanker Oxygen Gas	1	1	1	_	_	_	3
Industries Total		15	12	13	1	10	1	52

(-) not practiced
(1) Practiced

Appendix- 8

Techniques practiced for pricing products in Industries

Techniques		Full Costing Based Pricing	Variable Cost Base	Market Rate	Return on investment	Activity Based Costing Pricing	Tools Total
S. N.	Industries						
1.	Aqua Minerals Nepal Pvt. Ltd.	1	_	1	_	_	2
2.	Balaju Yantra Shala Pvt. Ltd	1	_	1	_	_	2
3.	Bottlers Nepal Ltd.	1	_	_	_	_	1
4.	Dairy Develop Corporation	1	_	1	_	_	2
5.	Hilltake Industries	1	_	1	_	_	2
6.	Himali Bakery Pvt. Ltd	1	1	1	_	_	3
7.	Kathmandu Flour Mill	1	_	1	_	_	2
8.	Nebico Pvt. Ltd	1	1	1	_	1	4
9.	Nepal Tent and Tarpaulin	1	_	1	_	_	2
10.	Nepal Film Dev Company Ltd	1	_	1	_	_	2
11.	Nepal Gas Udyog Pvt. Ltd	_	_	1	_	_	1
12.	Nepal Poly Pipe Pvt. Ltd	1	_	_	_	_	1
13.	Plastic Industries	1	_	1	_	_	2
14.	Shakya Aluminium	1	_	1	_	_	2
15.	Shanker Oxygen Gas	1	_	1	_	_	2
Industries Total		14	2	13	0	1	30

(-) not practiced
(1) Practiced

Appendix- 9

Methods used to measure and control the overall performance at the end of accounting year

Tools		Profit and Loss	Budgetary Control	Standard Costing	Financial Statement Analysis	Cash Flow Analysis	Activity Based Costing	Tools Total
S. N.	Industries							
1.	Aqua Minerals Nepal Pvt. Ltd.	1	1	_	1	1	_	4
2.	Balaju Yantra Shala Pvt. Ltd	1	_	_	1	1	1	4
3.	Bottlers Nepal Ltd.	_	_	1	1	_	_	2
4.	Dairy Develop Corporation	1	1	_	1	1	_	4
5.	Hilltake Industries	1	_	_	1	1	_	3
6.	Himali Bakery Pvt. Ltd	1	1	_	_	_	_	2
7.	Kathmandu Flour Mill	1	1	_	_	_	_	2
8.	Nebico Pvt. Ltd	1	1	1	1	1	1	6
9.	Nepal Tent and Tarpaulin	1	1	_	1	_	_	3
10.	Nepal Film Dev Company Ltd	1	_	_	1	1	_	3
11.	Nepal Gas Udyog Pvt. Ltd	1	_	1	_	_	_	2
12.	Nepal Poly Pipe Pvt. Ltd	1	_	_	_	_	_	1
13.	Plastic Industries	1	1	-	_	_	_	2
14.	Shakya Aluminium	1	1	1	_	_	_	3
15.	Shanker Oxygen Gas	1	1	_	_	_	_	2
Industries Total		14	9	4	8	6	2	43

(-) not practiced
(1) Practiced

Appendix- 10

Cost and revenue estimation techniques applied in Industries

Tools		Past Trend Analysis	Zero Based Budgeting	Market Survey	Judgemental Analysis	Others	Tools Total
S. N.	Industries						
1.	Aqua Minerals Nepal Pvt. Ltd.	1	_	1	_	_	2
2.	Balaju Yantra Shala Pvt. Ltd	_	1	_	_	_	1
3.	Bottlers Nepal Ltd.	1	_	1	_	_	2
4.	Dairy Develop Corporation	1	_	1	_	_	2
5.	Hilltake Industries	1	_	1	_	_	2
6.	Himali Bakery Pvt. Ltd	1	_	1	_	_	2
7.	Kathmandu Flour Mill	1	_	1	1	_	3
8.	Nebico Pvt. Ltd	1	_	1	_	_	2
9.	Nepal Tent and Tarpaulin	1	_	1	1	_	3
10.	Nepal Film Dev Company Ltd	1	_	_	_	_	1
11.	Nepal Gas Udyog Pvt. Ltd	1	_	1	_	_	2
12.	Nepal Poly Pipe Pvt. Ltd	1	_	1	_	_	2
13.	Plastic Industries	1	_	1	_	_	2
14.	Shakya Aluminium	1	_	1	_	_	2
15.	Shanker Oxygen Gas	1	_	1	1	_	3
Industries Total		14	1	13	3	0	31

(-) not practiced

(1) Practiced

Appendix- 11

Inventory procuring techniques applied by the sample Industries

Techniques		Economic Order Quantity	Lead Time	Reorder Level	Consumption Rate	Order Place by Customer	Just In Time	Inventory Count	Tools Total
S. N.	Industries								
1.	Aqua Minerals Nepal Pvt. Ltd.	1	1	1	1	1	_	_	4
2.	Balaju Yantra Shala Pvt. Ltd	_	_	_	_	1	_	_	1
3.	Bottlers Nepal Ltd.	1	_	_	_	_	_	1	2
4.	Dairy Develop Corporation	1	_	_	1	_	_	_	2
5.	Hilltake Industries	1	1	1	1	_	_	_	4
6.	Himali Bakery Pvt. Ltd	1	_	1	1	_	_	_	3
7.	Kathmandu Flour Mill	1	1	1	1	_	_	_	4
8.	Nebico Pvt. Ltd	1	1	_	1	_	_	_	3
9.	Nepal Tent and Tarpaulin	_	_	_	1	1	_	_	2
10.	Nepal Film Dev Company Ltd	1	_	_	1	1	_	_	3
11.	Nepal Gas Udyog Pvt. Ltd	_	1	1	1	_	_	_	3
12.	Nepal Poly Pipe Pvt. Ltd	1	_	1	_	_	_	_	2
13.	Plastic Industries	1	1	1	_	_	_	_	3
14.	Shakya Aluminium	1	_	1	1	_	_	_	3
15.	Shanker Oxygen Gas	_	_	1	1	_	_	_	2
Industries Total		11	6	9	11	4	0	0	41

(-) not practiced

(1) Practiced

Appendix- 12

Transfer pricing techniques practiced in Sample Industries.

Techniques		Market Price Based	Cost Price Based	Target Return Based	Negotiation Based	General Pricing (Opp Cost)	Tools Total
S. N.	Industries						
1.	Aqua Minerals Nepal Pvt. Ltd.	–	1	–	1	–	2
2.	Balaju Yantra Shala Pvt. Ltd	1	1	–	–	–	2
3.	Bottlers Nepal Ltd.	1	–	–	–	–	1
4.	Dairy Develop Corporation	–	1	–	–	–	1
5.	Hilltake Industries	1	1	–	1	–	3
6.	Himali Bakery Pvt. Ltd	1	–	–	–	–	1
7.	Kathmandu Flour Mill	–	1	–	–	–	1
8.	Nebico Pvt. Ltd	–	1	–	1	–	2
9.	Nepal Tent and Tarpaulin	1	–	–	1	–	2
10.	Nepal Film Dev Company Ltd	–	1	–	1	–	2
11.	Nepal Gas Udyog Pvt. Ltd	–	1	–	–	–	1
12.	Nepal Poly Pipe Pvt. Ltd	1	–	–	–	–	1
13.	Plastic Industries	–	1	–	–	–	1
14.	Shakya Aluminium	–	1	–	–	–	1
15.	Shanker Oxygen Gas	1	–	–	–	–	1
Industries Total		7	10	0	5	0	22

(-) not practiced

(1) Practiced