CHAPTER - I

INTRODUCTION

1.1 Background of the Study

A company earns profit by attracting customers willing to pay for the goods and services it offers. Customers compare the goods and services offered by a company to the same goods a services offered by other companies. The key to a company's success in reducing the cost. Identifying how a company will do this is what strategy is all about. However, a chosen strategy is only on good as how effectively it's implemented. The management accountant provides input that aids in developing strategy, building resources and capabilities, and implementing strategy. To understand the managements accountant's role, we most first understand the managers task in more. (CK Lal, 2004).

Cost reduction strategy means reducing the expenses. Cost reduction is the real and permanent reduction in the unit cost of goods manufactured are services redered without improving their suitability for the use intended. (IMA-London).

Long term sustainable development of any directly or indirectly, depends on the promotion and growth of trade and industries. For the development of a country, trade and industry are the key factors. The life of trade and industries depend on the efficient utilization of limited resources.

The business and industrial enterprises are initiated by the entrepreneurs who have long term vision and skills. To initiate the business and industrial enterprises are initiated by the entrepreneurs who have long term vision and skills. To initiate the business and industrial enterprises, the cost plays a vital role. Every business forms or industries must bear cost to run day to day business activities. So, cost is an un unavoidable factor for business firms. Every trade organization worried about management of cost in it's daily operation. To manage cost is very challenging job for every organization. In developed countries, management of cost and application of cost reduction strategy are also very challenging tasks. In the developing countries like Nepal, business firms are said to be losing their competitiveness due to higher cost. Most of the organization are not using cost reduction strategy in Nepal. So, they are suffering from loss every year. As Nepal is entered into WTO, Nepalese manufactures have to face high competition. Free entrance of highly quality based cheap products in main headache for Nepalese entrepreneurs. Due to this, Nepalese countries made of highly sophisticated technologies with lower price. This is the main challenging

issue for Nepalese organization. So, it has been essential manufacturing enterprises to apply the cost reduction strategy effectively and efficiently.

To remain competitive in to days global market, business must countinusoly improve. More ever, this continuous improvement needs to apply across the spectrum of business activity. From product design and quality through production operation and cost management, to customer service. Continuous improvement may be defined as the constant effort to eliminate the ulaste, reduce response time, simplify the design of both product and process and improve quality of customer's service. One compelling reason for the need for continual improvement is the price down cost concept. This refers to the tendency of price to fall over the life cycle of the newly introduced product (Hilton, 1997: 264).

Application of cost reduction tools means managing of limited resources to produce high efficiency. It consists of those actions which are taken by manager to reduce cost. Cost reduction activities, taken by manager, are based on two criterions. One criterion of action is prioritized on the basis of information extracted from the accounting system. Other actions however are undertaken without the use of accounting information. They involve process involvements where an opportunity has been identified to perform process more effectively and efficiently and which have obvious cost reduction out comes. Nowadays every organization is facing the challenges of competition. Success is not a matter of chance. In every comfortable and affordable price, production of qualitative product is very challenging job. It is not very hard, it organization use the cost reduction tools. So, management of cost by using cost reduction strategy is necessary in every business organization (Lal, 1997: 967).

The research work, 'Application of cost reduction tools in Nepalese manufacturing organization is not a case study. It's a survey study on many manufacturing industries situated in Kathmandu valley. There are so many manufacturing industries in Kathmandu valley. Some of them are running successfully and some of them are in critical condition. Thoses who are running successfully are healthy organization and those who are in the situation of do or die are called unhealthy organization. There are somong causes of success of failure. Among them, cost is main factor. Only qualitative goods cannot be sold due to high cost. So, reduction of cost is very much essential. Most of the Nepalese organization are facing such high cost problem. Now, this research work is going to explore and examine whether or not the Nepalese organizations are using cost reduction strategy. So, it mainly focuses on the manufacturing organization in terms of application of cost reduction strategy (M.K. Thapa, 2008).

1.2 Relevance of the Study

Everyday news regarding the shut-down of many big corporation. Although the reason whatever, the cost be sometimes explained reasonable. Every business organization wants its contribution in society. It wants to niche at least a sustainable morgin for it. But is not reachable when organization failed to manage its cost. Then it becomes very miserable condition for organization. Most of organization thinked that to purchase at lower price from supplies is only the key factor to reduce the cost. But infact, it is a little effort to reduce the cost not at all. There are so many other tools is important. This research work is significant in terms a exploring and examining the cost reduction tools applied by Nepalese manufacturing organization. So, the out come of this research work is equally important to generate the knowledge to researcher as well as Nepalese organization.

1.3 Statement of the Problem

The main problem of Nepalese manufacturing organization is incurrence of high cost during the product production process. I due to, this many of the firms are being shut down. It's a very miserable condition for industry as well as nation also. Most of the organization thought that they have to buy raw materials in very low cost from their supplier. The purchase manager only concerns with this topic. So other manager show less responsibility toward cost minimization. This is why organization have to face high cost problem. This is not only the one's responsibility. As we know, there are so many cost centers in one manufacturing organization. All cost centers should be responsible for managing the cost. So, management should know that using many cast reduction tools other then direct bargaining for costs with the supplies can reduce cost of goods and services. Lack of well educated human resources and experiences management team are the problem in every business firms.

In the above context, the research works intends to explore the following question.

- What's the manages attitude to use such strategy ?
- Do knowledge of cost reduction strategy affect in the application of the strategy ?
- To what extent do organization apply cost reduction strategy ?

1.4 Objectives of the Study

The main objective of the study is to evaluate the application of the cost reduction strategy in Nepalese manufacturing organization. In order to meet the main objectives of the study, the following sub objectives have been proposed.

- To explore the current state of application of the reduction strategy in Nepalese manufacturing organization.
- To identify the practical difficulties for applying cost reduction strategy in Nepalese manufacturing organization.
- To know the view of regarding application of cost reduction strategy in organization.
- To provide suggestions and recommendation for the betterment of cost reduction.

1.5 Limitations of the Study

- The study focuses only the manufacturing organization based on Kathmandu valley.
- The study is based on the application of selected cost reduction strategy only.
- The research is mostly based upon primary data provided by the respondents. So, the reliability of the conclusion highly depends upon respondents response.
- The status of the application of cost reduction tools analyzed in this research work is based on the data collected at the time of unit visit. Hence, this research work is not incurred the status before and after the visit.

1.6 Organization of the Study

The research report has been divided into five different chapters.

- **Chapter I : Introduction**

This chapter consists of the background of the study, relevance of the study, objectives of the study, statements of the problem, limitation of the study and organization of the study.

- **Chapter II : Review of Literature**

This chapter deals with conceptual review, review of previous related studies and research gap.

- **Chapter III : Research Methodology**

In this chapter contains research design population and samples, sources of data collection technique and data analysis tools.

- **Chapter IV : Data Presentation and Analysis**

This chapter deals with data presentation and analysis with the help of various tools, graphs and diagram. Major findings of the study are also presented in this section.

- **Chapter V : Summary, Conclusion and Recommendations**

The last chapter of research report contains summary, conclusion and recommendation of the study.

CHAPTER - II

REVIEW OF LITERATURE

The research work relates to the application of cost reduction strategy in Nepalese manufacturing organization. Accordingly, literature review relates the following:

- Conceptual review
- Review of previous studies

2.1 Conceptual Review

2.1.1 Concept of Cost

Cost is the amount of expenditure actual (incurred) or national (attributable). Relating to a specific things or activity, many be a product, job services, process or any other activity. Cost is the amount of resources given up in exchange for some goods or services. The resources given up are generally in terms of money or if not terms of money, they are always expended in monitory terms. The terms of money or if not in terms of money, they are always expressed in monitory terms. The terms' 'cost' itself is with out any significant meaning and therefore, it is always advisable to use it with an objective or phrase that will convey the meaning intended such as prime, direct, indirect, fixed, variable controllable, opportunity, imputed, sunk, differential, marginal, replacement and the like (Cal, 1996: 23).

Accountants, economist, engineers and others facing cost problem have developed cost concepts and cost terminology according to their needs. Basically a concept should be stated in the terms in which it has became generally familiar. It's not easy to define or explain the terms cost leaving no doubt concerning its meaning. The committee on cost concepts and standards of America Accounting association wrote "Cost is foregoing, measured in monitory terms, incurred or potentially to be incurred to achieve a specific objectives." In a tentative set of board accounting principles for business enterprises "cost" is defined as an exchange price, a foregoing, a sacrifice to source benefit. In financial accounting, the foregoing, or sacrifice at date of acquisition is represented by a current or future diminution in cash or other assets" (Montz/Cary, 1972: 39).

2.1.2 Element of Cost

For the purpose the total cost is normally analyzed by the element of total cost i.e. by the nature of expenses. Broadly speaking the elements of cost is three in numbers viz, materials (stores) labor (wages) and overhead (other expenses) (Swaminathaon, 1978: 22).

The element that enter into the cost of quality are direct materials, direct labor and manufacturing overhead. The elements that enter into the certain of a particular business or municipal service are essentially labor or pay roll cost and variety of overhead or indirect costs (Neures, 1957: 5).

2.1.3 Classification of Cost

Classification is the process of grouping cost according to their common characteristics. It is a systematic placement of like items together according to their common features (Dongol, 2062: 20).

There are many objectives of cost classification depending on the requirements of management. However, the following objectives are considered very useful and significant.

i. Determining product cost for stock valuation and profit management.
ii. Planning.
iii. Decision making.
iv. Control (Lal, 1996: 20).

1. Natural Classification Cost

a. Direct Materials

The direct materials are all materials that become a part of the product. The cost of which are directly charged as part of the prime cost. In other words, it's the material which can be measured and charged directly to the cost of product (Owler Brown, 1960: 80).

b. Direct Labour

Direct labour is all labour expended in altering the cojnstruction, conformation, or condition of the product. The wages paid to skilled and unskilled worked for this labour can be located specifically to the particular cost discount concerned hence the term "Direct wages", which may be defined as the measure of direct labour of Money (Owler Brown).

c. Direct Expenses

Direct expenses include any expenditure other than direct materials or direct labour directly incurred can a specific cost unit. Such special necessary expenses are changed directly to the particular cost account concerned, as a part of prime cost (Owler and Brown, 1996: 8).

d. Factory Overhead

Factory overhead also called manufacturing expenses or factory burden may be defined as the cost of indirect materials, indirect labour and indirect expenses (Lal, 1996: 27).

e. Selling Distribution and Administrative Overhead

Selling and distribution overhead usually begin when the factory cost end. Such expenses are generally incurred when the product is in saleable condition. It covers the cost of making sales delivering/dispatching product (Lal, 27).

2. Cost Behaviour (In Relation to Changes in Output, Activity or Volume)

a. Fixed Cost

Fixed cost is cost which does not change in total for a given time period despite wide fluctuations in output or volume of activity. These are also known as standby costs; capacity cost or period cost fixed cost can be classified in the following categories for the purpose of analysis (Lal, 1996: 28).

1. Committed Cost/Capacity Cost

Fixed cost caused by purchase of capacity producing assets such as plant or equipment are called committee cost e.g. depreciation of plant equipment, insurance premium (Khan and Jain, 1997: 147).

2. Discretionary Cost

They are also known as programmed cost. Discretionary cost resulted from special policy decision, management program, new researches, R & D cost, new suptem development cost are examp;le of discretionary cost (Lal, 1996: 29).

3. Management Cost

Management cost are related to current operation which must continue to be paid to ensure the continued operating existence of the company e.g. management and staff salaries (Lal, 1996: 29).

4. Step Cost

A step cost is constant for a given amount of output and then increase in a fixed amount of a higher output level (Lal, 1996: 29).

b. Variable Cost

Cost that tend to vary total in direct proportion or in a cone to one relationship to changes in production activity. Sales activity or some other measure of volume are referred to as variable costs (Khan and Jain, 1997: 151).

In view of their behaviours, variable costs are some times called "engineered costs." An engineered cost is any cost that has an explict, specified, physical relationship with a selected measure of activity (Horngra, 1987: 206).

c. Mixed Cost

Mixed cost are costs made up from fixed and variable elements. They are a combination of deliverable cost and semi fixed costs. Because of the variable component they fluctuate with volume, because of the fixed component, they do not change in direct proportion to output. Semi fixed cost costs are those costs which remain constant up to a certain level of output after which they become variable (Lal, 1996: 30).

3. Degree of Traceability to the Product

a. Direct Cost

Cost which are easily traceable or identifiable with a product are called direct costs. It output units are the objectives of costing, then direct cost represents costs and resources that can be traced to or identified

with the finished product. Direct labour, direct material and direct expenses are example of direct cost (Lal, 1996: 31).

b. Indirect Cost

Indirect cost are those cost which cannot be identified with, or traced to a single product because they are incurred for several products. The examples are indirect materials, salary of factory seprrvisious etc. (Lal, 1996: 31).

4. Degree with Association with the Product

a. Product Cost

Product cost are identified with goods produced or purchased for resale. Product costs are initially identified as a part of the inventory one hand. These product costs (inventorial costs) become expenses (in the form of cost of good sold) only when the inventory is sold (Horngrer, 1996: 127).

b. Period Cost

Period cost are the expenses, which are recovered from the revenue of the period, normally, expenses of generate administration, selling and distribution cost and finance are treated a period cost. These cost are not necessary for production and hence, are called period cost (Nigan and Sharna, 1992: 26).

5. Functional Classification of Cost

a. Manufacturing Costs

Manufacturing costs are all product costs incurred to manufacturer the products and to bring them to a saleable condition, including direct materials, direct labour and direct manufacturing (or factory overhead) costs (Lal, 1996: 33).

b. Selling and Distribution Cost

Selling cost is the cost of seeking to create and stimulating demand and securing orders. Distribution cost is the cost of sequences of operations which begins which making the packed product available for dispatch and ends with making the reconditioned returned empty package for reuse. It includes advertising, sample, warehousing cost up keep and running cost of delivery ven (Dongol, 2062).

c. Administration Cost

This is general administration cost and includes all expenditures incurred in formulating the policy directing the organization and controlling the operation of an undertaking, which is not directly related to production, selling, distribution and research and development activity of function. It includes account office expenses, audit fees, bank charges, legal expenses, office rent, postage, telephone, rates and directs remuneration etc. (Dongol, 2062: 20).

6. Relationship with Accounting Period

a. Capital Cost and Revenue Cost

Cost can be divided into two board classes on the basis of accounting period to which hey relate : (i) capital expenditure and (ii) revenue expenditures. A capital expenditures provides benefit to future periods and is classified as expenses. A capital expenditure provides benefits to future periods and is classified as expenses. A capital expenditure will flow into the cost stream as an expenses, when the asset is used up or written off (Lal, 1996: 3).

7. Cost for Decision Making and Planning

a. Opportunity Cost

An opportunity cost can be defined as the potential benefit that is sacrificed when the choice of one course of action requires the giving up of an alternative course of action. Opportunity, cost is not usually entered on the books of organization but it is a cost that be expertly considered in every decision that a management makes (Garrison, 1985: 44).

b. Sunk Cost

A sunk cost is the cost that has already been incurred. Generally known as unavoidable cost, it refers to all past cost since these amount cannot be changed once the cost is incurred. They are the costs which have been created by a decision in the past and cannot be changed or avoided by any decision that is made in future (Lal, 1996: 34).

c. Relevant Cost

A cost which is influenced by a decision is relevant cost and hence is important for decision makes. Relevant cost in true sense is an incremental cost (Khan and Join, 1993: 162).

d. Differential Cost

A cost that is present under one alternative but is absent in whole or in part under another alternative is known as differential cost (Garrison, 1985: 45).

e. Imputed Cost/Implicit Cost

Implicit costs are those expenses, which cannot be proved for external reporting. These are not allowable for tax purpose. Implicit costs are implied in nature, which can just be understood, but may not needed to be paid in cash at present in or future, for example, interest can owners, capital (Bajracharya, et al., 2005: 51).

f. Out of Pocket Cost

While imputed costs do not involve cash outlays, out of pocket cost signify the cash incurred on an activity. No cash such as depreciation are not included in out of pocket costs. This cost concept is significant for management in deciding wether or not a particular project will at least return the cash expenditure associated with the project selected by management (Lal, 1996: 36).

g. Shutdown Cost

Shutdown cost are those cost which have to be incurred under all situation in the case of stopping manufacture of a product or closing down a department or a division. Shutdown cost are always fixed cost (Lal, 1996: 36).

8. Cost for Control

a. Controllable Cost

An item of cost is controllable if the amount of cost incurred in a responsibility centre is significantly influenced by the actions of the managed of the responsibility centre, otherwise it's non controllable (Welsch, et. al., 1977: 28).

b. Non Controllable Cost

Any cost that is not subject to change within the related responsibility centre lower level of management and with in the short time span is called a non controllable cost.

c. Standard Cost

Standard costs are those cost which are planned or predetermined cost estimated for a unit of output in order to provide a basic for comparison with actual costs. Standard costs are used to prepare budget (Lal, 1996: 37).

9. Cost Reduction Point of View

a. Cost that Added Value or Value Added Cost

A value added activity is an activity that customers perceive as adding use fullness to the product or service they purchase. For example painting a car would be value added activity in an organization that manufactures cars (Drmmy, 2000: 8-9).

b. Costs that do not Add Value or Non Value Added Cost

Non value added activities are operations that are either (i) unnecessary and dispensable or (ii) necessary but inefficient and immovable. Non value added costs which result from such activities, are the costs of activities that can be eliminated without determination of product quality, performance or perceived value (Hilton, 1997: 261-262).

10. Other Cost

a. Joint Cost

Joint cost arise where the processing of a single raw material of production resources result in two or more different products simultaneously. Joint cost relate to two or more products produced from a common production process or element material, labour or overhead or any combination there of so locked together that cannot be produced without producing the others (Lal, 1996: 37).

b. Common Cost

Common costs are those cost which are incurred for more than one product, job, territory or any other specific coating object. Common costs are non easily identifiable with individual products and therefore, are generally apportioned (Lal, 1996: 37).

2.1.4 Cost Reduction

Cost reduction may be defined as an attempt to bring cost down. Cost reduction implies real and permanent reduction in the unit cost of goods manufactured or services rendered without impairing their product or goods, suitability for the use of intended. The goal of cost reduction is achieved in two ways : (i)

by reducing the cost per unit and (ii) by increasing productivity. The steps for cost reduction include elimination of waste, improving operations, increasing productivity; search for cheaper materials imported standards of quality, finding other means to reduce into cost (Lal, 1996: 1077).

Profit in the difference between the state value and the cost of sales. Thus profit can be improved either by increasing the sale or reducing the cost or both. In most of the situations, sale value depends can market forces which can seldom be substantially influenced by managers. Usually, even a real increase in cost cannot be passed on fully to the customers and a portion of the cost is burned by the manufactured. Therefore, it's not always possible to improve profit by increasing sales value. Cost reduction is generally the only alternative or improving the profitability of a product. With all round increase in the cost of inputs and increase in completions, cost reduction has assumed great importance is most of the organizations (Bhattrachrya, 1992: 825).

While cost control aims at reducing the actual to the target, cost reduction aims to reducing the target themselves. Viewed from this point, it can be said that cost reduction beings where control ends cots. The necessary for cost reduction asses when the profit margin has to be increased without an increase in the sales turnover, i.e. for the same volume of sales the cost of sales should reduced. If costs are already under control and represent more or less the targets set up, the problem arises as to how best the profit margin could be increased i.e. what is the future step to be taken to reduce the target cost of production. This necessary leads us to cost reduction programs. Cost reduction is dynamic function, a function which can see no end, in as much as no result can ever be taken as unlimited goal. The working of cost reduction program has rightly been compared by one another to a tiger hunt (Swaminathan, 1978: 349).

Every organization has an objectives the attain public marketing strive for minimization of public welfare. However, maximization of profit is the overriding aim of enterprises in the private sector.

Cost reduction, in fact, is profit earning. It's essential for the survival of business. In competitive economy increase of price may not be a sound policy, consumers may stop buying product. It may ever lead to increase in raw materials, wages and other cots. The result may be a vicious spiral where product price increase are followed by wage and other increased costs which in turn are followed by price increase. The solution lies in cost reduction (Agrawal, 2026: 9).

Cost reduction, therefore focuses on the following :

- Real reduction in cost.
- The reduction should be of a permanent nature.

- It should not impair the suitability for intended use.

2.1.5 Cost Reduction and Cost Control

Cost reduction and cost control is not the same thing. In cost control, actual costs are compared with planned cost and necessary corrective activities are taken where there are variation. It's mainly concerned with adhening to the set standards which are assumed to be the desired state of efficiency in a given set of circumstances.

Cost reduction, however, is concerned with genuine saving existing costs a standard are regarded as merely yard sticks and efforts are made to improved and changed then in all sets of circumstances. The presumption is that genuine changes in costs are always possible (Agrwal, 2026: 9).

Thus, cost reduction is different from cost control. Cost control refers to the mechanism to keep the cost within the established standard, whereas cost reduction challenges the established standard by focusing on the concealed potential saving in the standard. Cost reduction is not cost saving because cost saving may result from a short term decision and under a bad business situations the cost saving decision may even result in the temporary reduction in quality, whereas cost reduction is always permanent in nature and never ignores the principle that the quality of product and its suitability for the intended use cannot be reduced in the process of cost reduction (Bhattacharya, 1992: 826).

2.1.6 Organization of Cost Reduction

The cost reduction progress should be initiated and followed up by a cost reduction committee, which should be preferably, is under the chairman ship of an industrial engineer. This committee will also include the cost account of the organization who, as its' financial adviser, will rende a device on the various programs that are discuss the new programs to be taken up the progress made can the programs computes. In this connections it should be noted that the research and development project are slightly different from cost reduction program. Research and development concentrate more on new products and improved methods, with the emphasis an increasing the utility of the product and its potentiality marketability. Cost reduction can the other hands aims at reducing the cost of production of the present manufacture and to increase the profit margined (Swaminathan, 1996: 350-351).

2.2 Organization of Cost Reduction

A cost reduction programmed should be all pervasive because cost reduction is attainable in almost all the areas of business activities. There can hardly be any areas of operation, which can not be improved (Bhattacharya, 1992: 286). Some of the cost reduction are as follows:

1. Production Design

Production design offers the greatest scope for cost reduction of a permanent nature. Designing being the first step in manufacturing a product, the impact of a decision at these stages is felt through out the manufacturing or processing of the product in the factory. The possibility of cost reduction should be investigated at the time of introducing a new design, as well as at the time of introducing any modification in an existing design (Bhattacharya, 1992: 286).

2. Production Planning and Control

Production planning and control (including materials planning and control) endeavours to achieve the best coordination among material, manpower and manufacturing facilities. So that delivery commitments are without causing waste of resources (Bhattacharya, 1992: 278).

3. Plant Layout and Equipment

Plant layout is the floor 'plan' which involves analysis and arrangement of equipment, work station and floor area to ensure most efficient utilization of equipment, plants facilities and plant service. A good plant layout aims at reducing at the area covered by production facilities (Bhattacharya, 1992: 827).

4. Factory Organization

A considerable cost reducing can be affected by improving the factory organization. Though cost reduction resulting from an improvement in the organization cannot be measured, yet it has been undoubtly established that economics can be achieved through improvement in the following even (Bhattacharya, 1992: 827).

- Improvement in the organization structure by defining functions and responsibility in clear terms.
- Improvement in communication among various management levels and between manages and workmen.
- Delegation of authority should be encouraged because it helps to achieve better supervision.

- The participation of employees in cost reduction programs.

5. Purchasing and Material Control

Purchasing and material control function should be systematically investigated and the following important question should be asked and answered (Bhattacharya, 1992: 827).

- Are purchase being made at the right place ?
- Is the material inspected as soon as it is received ?
- Is there a proper system for the collection and dissemination of market (row materials and other input) information ?
- Is there any scope of improving material handling ? etc. .

6. Marketing

In marketing, the following are the cost reduction areas; channels of distribution, sales promotion schemes, marketing research plan, territorial, responsibilities, and methods of remunerating sales men, advertising methods, after sales service costs, packaging method, material handling, and transport arrangement etc. (Lal, 1996: 1078).

7. Finance

The financial function aims at arranging fund must economically and ensuring the optional utilization of funds so arranged. Working capital provides sample scope too reducing cost because in most of the organization the scope exists for reducing working capital cycle. Working capital can be reduced by identifying parallel operation, relilizing, debt without delay, by reducing inventory level through effective inventory control and by reducing for liberal credit from suppliers of materials and services (Bhattacharya, 1992: 829).

8.3 Administration Function

Administrative functions include personal purchase and general administration. The goal of cost reduction requires efficient administration, effective purchasing procedure and a fir personal policy and schemes some of the important areas are : investment planning, cash discount policy, mechanized system of accounting, labour relations, labour welfare measure, availability of servicing facilities (Lal, 1996: 1078-1079).

9. Direct Labour

Some aspects that need systematic investigation to reduce the cost related to direct labour are:

- Scope of improving the time keeping system.
- Scope of improving labour productivity through work study.
- Proper maintenance of equipments and tools.
- Needs for supervision of standards so that they continue to be representative of the current scope for providing labour productivity through rationalization, training and use of other human resources development techniques etc. (Lal, 1996: 1079).

2.2.1 Cost Reduction Program

Cost control involves the comparison of actual results with per-determined standard. It's clear that for the control go be really effective, standards, should be received and revised periodically. An old standard might fail to represent the current conditions and a comparison of actual results with these would lead to misleading conclusion (Bhattacharya, 1992: 827).

The revision of standard required implement action of a system, which in the light of intervening changes, would continually question the existing standard. This system covers short and routine cost reduction program. Thus, short term and routine cost reduction program should form a part of the budgetary control/standard costing system (Bhattacharya, 1992: 830).

Long tern cost reduction scheme involved plans to deal with improving the efficiency in a particular field. The steps involve the identification of an area with the highest potential for cost reduction, a comprehensive survey to narrow down the area of investigation, application of cost reduction technique and implementation of the accepted suggestions which might involve capital expenditure. For achieving expected results it is essential that the objective of a particular cost reduction program, the scope of investigation and responsibilities of the individuals involves to the program are clearly defined (Bhattacharya, 1992: 830).

2.2.2 Cost Reduction Committee

There should be team work approach to cost reduction. In small concerns, cost reduction is the concern of all members of the staff and the initiative is generally taken by the higher levels management (Agrwal, 2026: 9).

However, in large concerns, a cost reduction committee should be set up to effect permanent savings. It's members should be drawn from research and development, productions and marketing departments with the cost accounting being the employees, personnel should know what products are being produced along with a clear understanding of their cost structure. Cost centres with clear demarcation responsibilities for the cost reduction should establish and the area of cost reduction programmed is essential to measure its effectiveness (Agrwal, 2026: 10).

Effective management and cost saving are interrelated. The survival of our industries very much depends can their cost reduction consciousness. In fact, it is essence of individual survival (Agrwal, 2026: 10).

2.3 Cost Management and Cost Reduction Tools

Cost management focuses on cost reduction and continuous improvement and change rather than cost containment. Traditional cost control system tend to be based can the preservation of the status quo and the ways of performing existing activities are not reviewed. The emphasis is can cost containment rather then cost reduction. Indeed the term cost reduction could be used instead of cost management. But the former is an emotive term. Therefore, cost management is preferred whereas traditional cost control system is routinely applied on a continuous basis, cost management tends to be applied on a adhoka basic, when an opportunity for cost reduction is identified. Also many of the approaches that are incorporated with the area of cost management do not necessarily involve the use of accounting techniques. In contrast, cost control relies heavily an accounting technique (Drnny, 2004: 943-944).

Cost management consists of those action that are taken by managers to reduce cost some of which are prioritized on the basis of information extracted from the accounting system. Other actions, however, are undertaken without the use of accounting information. They involve process involvements, where opportunity has been identified to perform process more effectively, and efficiently, and which have obsious cost reduction out comes. It's important that organization are aware of all approaches that can be used to reduce costs even if these method do not really based an accounting information. Organization should also note that although cost management seeks to reduce costs, it should not be at expenses of customer satisfaction. Ideally, the aim is to take actions that will both reduce cost and enhance customers satisfaction (Drnsy, 2004: 945).

Manager commonly use the following tools to implement the firms broad strategy and to facilitate the achievement of success can critical success factors. Benchmarking, total quality management, continuous

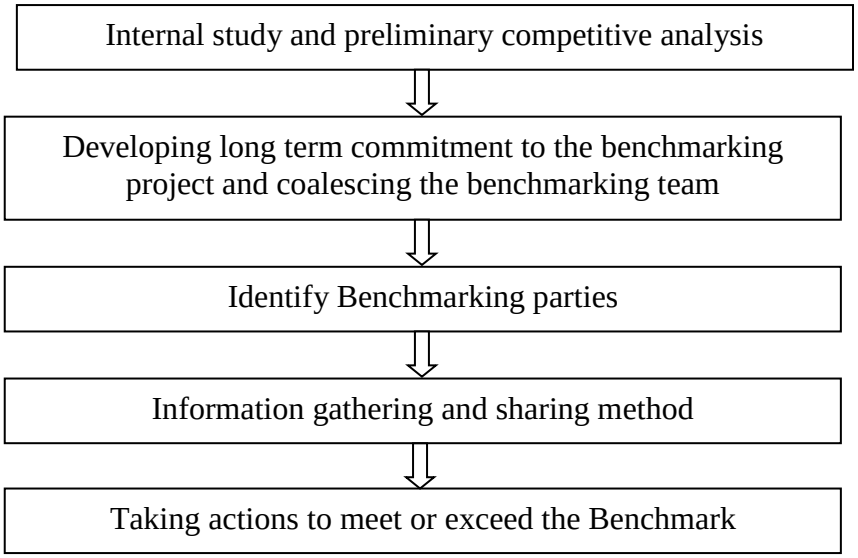
improvement (Kaizen). Activity based costing, reengineering, theory of constrains, mass customization, target costing, life cycle costing and the balance scorecard (Blecher, 1999: 16).

2.3.1 Benchmarking

In order to identify the best way of performing activities and business processes organization are turning their attention to benchmarking, which involves comparing key activities with world class best activities and with world class best practices. Benchmarking attempt to identify an activity, such as customer order processing that needs to be improved and finding a non-rival organization that is considered to represent world class best practise for the activity and study how it performs the activity. The objectives are to find out how the activity can be improved and ensure that the improvements are implemented. Benchmarking is cost beneficial since an organization can save time and money avoiding mistakes that other companies have made and/or the organization can avoid duplicating the efforts the other companies. The overall aim should be to find and implement best practice (Drnsy, 2004: 9650).

2.3.1.1 Process of Benchmarking

The benchmarking process typically consists of five stage that include several organization/diagnostic, operational, and informational factors (Atkiansan and Kaplan, 2004: 299).



2.3.2 Cost of Quality

Cost of quality is the cost associated with the prevention identification, repair and rectification of poor quality and withy opportunity costs term lost production time and sales as a result of poor quality. Traditionally, quality costs had been limited to the cost of finished units. Other cost of poor quality ware included as overheads and not identified as quality cost. Firms have discovered that in addition to manufacturing cost quality cost includes cost associated with supporting functions such as product design, purchasing, public relations and customer services. Toseph Juran classified cost of quality into four

categories: preventican, appraisal, internal failure and external failure. A main criterion in Jurans classification of quality cost is the time when quality costs are incurred (Blocher, 1999: 175).

1. Prevention Costs

Cost of preventing defective work is usually expanded before the product is made or the service is rendered. They include the cost of preventive maintenance, quality planning and training and the extra cost of acquiring higher quality of raw material (Drnsy, 2001: 901).

2. Appraisal Costs

This cost is incurred for auditing service procedure to make sure they confirm to prescribe work practi (Dailworth, 1993: 466).

3. Internal Failure Cost

This cost includes collecting or repeating any services activities before a services customer leaves an establishment. They include costs incurred before the product is dispatched to the customer, such as the cost of scope, repair, down time and work stoppages caused by the defects (Wolin, 2000: 902).

4. External Failure Costs

These costs are associated with the defects found after items are shipped to the customer. They include costs of handling customer complaints warranty, replacement, repairs of returning product and the cost arising from a damaged company reputation (Drnsy, 2000: 992).

2.3.3 KATZEN (Continuous Improvement)

Kaizen costing is similar to target costing in its cost reduction mission, except that it focuses or reducing cost during the manufacturing stages of the total life cycle of a product' Kaizen is the Japanese term for making improvements to a process though large innovation, Kaizen's goals are responsible because when the product is already in the manufacturing process. It's difficult and costly to make large change to reduce costs. Kaizen costing contrasts with target costing which allows many more opportunities to effect change because it occurs much earlier in the products life cycle (Blocher, 1999: 13).

The aim of Kaizen costing is to reduce the cost of components and products by a pre-specified amount. Moden Hamada (1991) descries the application of Kaizen costing in Japanese automobile plant. Each plant is assigned a target cost reduction ratio and this is applied to the previous year's actual cost to

determine the target cost reduction. Kaizen costing relies heavily an employee empowerment. They are closet to the manufacturing process and customers are likely to have greater insights into how costs can be reduced. Thus, a major feature of kaizen costing is that workers are given the responsibility to improve process and reduce cost. Unlike target costing it is not accompanied by a set of technique or procedures that are automatically applied to achieve the cost reduction (Drnsy, 2004: 951).

2.3.3.1 Elements of KAIZEN System

There are basically four elements applied to kaizen system. They are (Paduel, 2005: 42244):

- Theme selection
- Reasons for theme selection
- Analysis of current situation
- KAINZEN goal setting and action plan
- D for "do"
- Execution
- C for "check"
- Confirmation of the results
- A for "act"
- Standardization
- Remaining problems and future plans.

For effective application of KAIZEN the management should be three dimensional.

a. Policy management,
b. Department management,
c. Inter departmental management.

PDCA cycle is used to identify the problem and the portian of original goals which has not been received. So kaizen can be generated to situation. Using PDCA model the kaizen is generated as follows:

Step 1 : Find a problem and select themes (policy)

Step 2 : Find the cause too the problem and consider the reasons why the theme was selected.

Step 3 : Study what is the most influential factor and analyze the present situation.

Step 4 : Consider remained measure using 5 W 1 H principle as follows.

5 Ws, Why (concerning with necessity)
What (concerning with objectives)
Where (concerning with place)
When (concerning with time and limits)
Who (concerning with person)

1 H : How (concerning with method

Step 5 : Implement remedial measure.

- Integration of TQM function and professional function.
- TQM function and professional function both be integrated to kaizen.
- Kaizen will be effective only if both function are cooperating.
- Top down and butter up management.

There should not be restriction for upward mensaging of kaizen system has to be implemented effectively. Two way traffic should be entertained for communication. Similarly, employees need to be motivated to participate in 5s activity, suggestion program (idea box) and quality circle. The 5s activities area as follows:

5s	Original Japanese	English meaning
1s	Serious clear out	Short out unnecessary item in the work place and discarded then.
2s	Section or configure	Arrange all necessary item in good order so that they can be picked for use : a) A place for everything. b) Everything in it's place.
3s	Socio or clean check	Clean your workplace completely so that there is no dust on the floor, machines or equipment.
4s	Sei ketsu or conform	Maintain a high standard of housekeeping and a works place organization at all timed.
5s	Sbits like or custom and practises.	Train people to follow good house keeping disciplines automatically.

2.3.4 Activity Based Costing and Management

A new method of cost accounting developed in the part 10 years called "activity based" accountiness it records all costs. With in the next 10 years at should be in general use. And then we will were operational control manufacturing (Peter F. Druker P.F., 1993: 14).

Many firms were found, they can improve planning, product costing, operational control and management control by using activities analysis to developed detailed description of the specific activities performed in the operation of the firm. The activities analysis provides the basis for activity based costing and activity based management. Activity based costing (ABC) is used to improve the accuracy of cost.

Analysis by improving and tracing of cost objects. ABC is used to cost objects ABC is used too different cost objectives including individual products. And related groups of products, and individual customers. Activity based management (ABM) uses activity analysis to improve operational control and management control. Although ABC and ABM were been in practise for some time, only in recent year were they become widly used. These technique are specially useful when operations are complex, with the large number of products and manufacturing processes steps in providing the service to customs when operation are complex, the identification of cost tracing for activities can provide of good understanding of cost drives and cost behaviour that is difficult to obtain without detail activity analysis. ABC and ABC are key strategic tools for firms with complex operation (Blocher, 1999: 13-14).

ABC helps firms to reduce distortions caused by the traditional costing system and obtains more accurate product cost. It provides or clear view of how a firm's diverse products, service, and activities contribute in the long sum to the bottom line. ABM focuses on managing activities to promote business efficiency and effectiveness, and to increase not only the value received by customers but also the firms profit (Blocher, 1999: 89).

ABC and ABM are classily tried to strategic cost management. Mangers receive more meaningful information to answer strategic questions such as :

- Where are potential impact an pricing and product line decisions if a firm switches from the traditional costing system to an activity based costing system ?
- What are potential cost savings if affirm uses ABM to identify and eliminate non value added activities to achieves it's low cost strategy ?
- How can ABC/ABM help to firm achieve its completive strategic of high performance and short lead time in developing its product ?

- How can ABC/ABM help a firm analyze its major customers profitability and develop a customer focused strategy ?

2.3.5 Reengineering

Reengineering is a process for creating competitive advantage in which a firm recognizes its operating and management functions, often with the result that jobs are modified, combined, or eliminated. It masdefined as the fundamental rethinking and radical redesigning of business process to achieve dramatic improvements in crital, contemporary measures of performance, such as cost, quality, service, and speed. Under the pressure of global competition, many firms look a reengineering as a way to reduce the cost of management and operations, and as a basic for careful reanalysis of the firm's strategic competitive advantage, cost management supports the reengineering effort by providing the relevant information (Blocher, 1999: 140).

Reengineering is the complete redesign of a process. With an emphasis on findings, create new ways to accomplish can objectives reengineering has sometimes been desired as talking blank piece of paper and starting from scratch to redesign a business process. Rather than searching continually too minute improvements, reengineering in value a radical shift in thinking about new objectives should be meet (Hilton, 1997: 268).

Reengineering is the fundamental thinking and radical redesigning of business process to achieve contemporary measure of performance, such as cost, quality, service and speed (Hammer, 1993: 2).

2.3.5.1 Reengineering Process

Step 1 : State a Case for Action

The need for change should be effectively communicated to company employers through educational and communication campaigns. Two key message should be articulated.

- A need for action: Here is a company, and this is why can't stay here.
- A vision statement : This is what, we, as a company needs to become.
- The objectives for reengineering must be I the from of qualitative and quantitative vision statement. This objectives include goals for cost reduction. Time to time market quality and customer satisfaction level and financial indicators.

Step 2 : Identify the Process

All major process in organization should be initially identified. However, not all major process should be reengineered at the same time. The following questions define the criteria for selecting processes of reengineering.

- Which process are currently most problematic ?
- Which process are critical to accomplishing company strategies and were the greatest impact on the company's customer ?
- Which processes are most likely to be successfully redesigned ?
- What is the project scope and what are the costs involved ?

Step 3 : Evaluation Enablers

Information technology and human/organizational issues act as enables of the reengineering process. Technology evaluation has now became a core competency required of all companies, companies should develop the ability to evaluate current and emerging technology and identify creative application to redesign their existing process.

Step 4 : Understanding the Current Process

The current process must be studied to understand the activities which are essential to completion. We need to introduce some technology to describe component activities to add out analysis. All were activities can be classified into three types.

1. Value adding work : It consists of all the activities that create the goods and services that customers want. Value adding work can rarely be eliminated from a process, although it can be improved.

2. Non-value adding work : It is mainly administrative overhead, the reporting, checking, supervising, controlling, reviering and coordinating.

3. Waste work : It's pointless work whose absence would, by definition, not be noticed by the customers, producing reports that no one read, doing erroneously, so that it needs to be done and redundant checking activities are needed to be eliminated.

Step 5 : Create a New Process Design

Process design requires beginning with a clean rules, procedures, and values so as to create new process design. They also need to utilized the principles of reengineering that were been discerned. The first

emphasis in reengineering process is to eliminate all waste work. Waste work can often be eliminated immediately during the reengineering effort. Next, focus, is on elimination of non-value adding work. The consequences of redesigring process, to reduce non-value adding work are significant.

Step 6 : Implement the Reengineered Process

Leadership is critical, not just to the implementation process but to the entire reengineering effort. Process engineering teams are typically responsible for implementing the new designs. However, support and buy in from line manages are erucial to success because implementation changes accountability of line managers while expecting them to deliver on the improvements.

2.3.6 Theory of Constraints (TOC)

In contrast to target costing, which focuses on the early phases of the cost life cycle, the theory of constraints focuses an manufacturing activity. The theory of constrains was developed by Goldratt and Cox to help manages to improve the overall profitability of the firm. This theory focuses the managers attention on the constraints, or bottlenecks, that slow the production process. The main idea is that a firm succeeds by maximizing the overall rate of manufacturing output, which is called the through put of the firm. Through put is defined as sales less direct costs, including purchased components and material handling cost (Blocher, 1999: 140).

TOC directs manager attention to the speed with which the products raw materials and purchased components are passed into final products and delivered to the customer. TOC emphasizes the improvement of throughput by removing or reducing the bottlenecles in the production process that slow the rate of output manufacturing and distribution process that do not affect throughput are nonbinding constraints that receive less attention than battlencks or bindings constrains (Blocher, 1999: 140).

2.3.6.1 Steps in Theory of Constraints Analysis

Step 1 : Identify the binding Constraints

In the first step management account works with manufacturing managers and engineers to identify binding constraints by developing a network diagram of the flow of production. A network diagram is a flow-chart of work done that shows the sequence of process and the amount of time required for each. The purpose of the network diagram is to help the management bottleneck. A bottleneck is often indicated by a process with relatively large amount of inventory accumulation or where there are led times. Task analysis, which describes the each process in detail, also can be used to identify binding constraints.

Step 2 : Determine the most efficient utilization for each binding constraints

In this step, the management account determines how to utilize the firms resources most efficiently. The approaches differs some what depending can wether there is one product, or two or more. If there is one product, the management accountant looks too ways to maximize the flow of production through the constraint. For two or more product, however, the deter mimation of which product or product mix to product becomes important, as does maximizing the glow through the constraints. Different products are likely to require different times on the binding constraint. Thus, manager must determine the most profitable mix of the products. Determining the most profitable product mix involves careful analysis of the profitability of each product as well as the time required for each product on the binding constraints.

Step 3 : Manage the Flows through Binding Constraints

In this step, the objective is to manage the flow of production in and out of the binding constraint to smooth flow of production through out the plant. The orderly scheduling of production prevents the building up of materials or work in process inventory at various processes. An important tool for managing product flow in this context is the Drum-Buffer. Rope (DBR) system which is a system for blancing the flow of production through a binding constraints.

Step 4 : Add Capacities to the Binding Constraint

As a longer-term measure to relieve the bottleneck and improve throughout, management should consider adding capacity to binding constraints, by adding new or improved machine/and/or additional labour.

Step 5 : Redesign the Manufacturing Process for Flexibility and Fast Throughput

The most complete strategic response to the bottleneck situation is to redesign the manufacturing process, including the introduction of new manufacturing technology, deletion of some hard to manufacture products, and redesign of some product for greater case of manufacture simple removing one or more minor features can a given product might speed up the production process significantly. The use of value engineering as described earlier might help at this point.

2.3.6.2 AC and Theory of Constraints

Activity based casting (ABC) is employed commonly by firms using such cost management methods as target costing and the theory of constraints. The difference is that TOC take a short term approach to

profitability analysis, whereas ABC costing develops a long term analysis. The TOC analysis has a short term focus because of its emphasis only can materials related costs, which ABC includes all products cents (Blocher, 199: 195).

On the other hand, unlike TOC, ABC does not explicitly include the resource constraints and capacities of production activities. Thus, ABC can not be used to determine the short term best product mix, as for the auto windows manufactures. ABC and TOC are thus complementary methods; ABC provides a comprehensive analysis of cost drives and accurate unit cost, as a bask for strategic decision about a long term pricing and product mix. In contrast, TOC provides a useful methods for improving the short term profitability of the manufacturing plant through to short term product mix adjustments and through attention to production battlener (Blacher, 1999: 145).

2.3.7 Just in Time

Think of a situation where we produce the required goods only at the time when they are needed and in the quality that is needed; and where this holds goods for finished products and semifinished products, both. If such a situation materializes, the inventories of the finished goods and work in progress would be almost nil or now, if we make our raw materials supplier agree that they should deliver their goods only at the time and in the quantities we need them to, then we are almost eliminating raw materials inventories as well. We shall then were virtually zero inventories (or near about zero). This is called the Just-In-Time (J-I-T) production system founded by Tailichi Ohno (a vice president at Toyota) and first successfully implemented at the Toyata motor company's plants in Japan and now being tried at various manufacturing industries all over the world (Bhattacharya, 2004: 36.1).

The competitiveness of Japanese manufactured products has focused attention on their manufacturing systems since the basis of their success was high quality, competitively period production. Indeed, the Japanese market strategy seems to be rooted in their production systems and the literature is filled with reports of remarkable quality levels, achieved along with lower cost through higher productivity and very low in process inventories (Buffa, 1987: 436).

Sepehri (1986) reports on a sample of five Japanese companies that employ JIT methods producing the necessary parts in the quantities needed at the time they are needed as a basic too companying the result of five Japanese companies in providing productivity, reducing set up time, reducing inventor improving quality, saving space, and improving quality saving space and reducing lead times (Buffa, 1987: 463).

JIT manufacturing requires making a product or service only when the customers, internal or external, requires it. It usages a product layout with a continuous flow-one with or delap once production starts. This means a substantial reduction in setup costs is necessary to eliminate the need to produce in batches; therefore, procening system must be reliable (Anthery, 2004: 203).

2.3.7.1 Single Unit Production and Conveyance

The JIT concept may were been borrowed from the inventory system of American supermarkets, i.e. only the units that are sold are replaced. It is actually a production and materials planning system where the production and procurement closely flow the actual demand. And this system is carried down the line from final product to the basic component. It can be perceived as a job order production carried to the extreme of single unit job ordering yet retaining the convey or line system and it's advantages. There are no lot size production any where (if invenitable, they are minimized). As and when the item is produced it is conveyed to the next process so that there is no 'waiting' involved at any place. Of course, the operation time at each work place are also equalize. In short, JIT we were (i) no delay either due to tot size production or due to un equal production time of different work place and (ii) conveyance times are also balanced JIT is a combination or single unity production and the convefance or system and is called 'IKKO' Nagare" in Japanese meaning single unit production and Corveryaru (Chery, 2004: 36.1).

2.3.7.2 Eliminating Wase and Adding Unable

Just in time requires a great deal of organizational discipline. As in the case of material requirements planning (MRP), JIT requires not only changes in the way of company handles its inventory but also changes in its culture. JIT also encompanes the Japanese managerial characteristics (Adam, 2005: 5677-468).

The seven wastes Shigee Singo, as recognized JIT sauthority and engineer at the Toyato motor company identifies seven wastes as being the target of continuous improvement in production process. By attending to these wastes, improvement is achieved (Adam, 2005: 568).

1. Waste of over production.
2. Waste of waiting.
3. Waste of transportation.
4. Waste of processing it.
5. Waste of stocks.
6. Waste of motion.
7. Waste of making defective products.

2.3.7.3 Value Added Manufacturing

JIT's seven wastes are at the root of what US companies term value added manufacturing : any step in the manufacturing process that does not add value to the product for the ustomes is wasteful. Examples of wasteful steps included process deleep (WTP) process inventories, finished goods inventories, excessive paper processing and many other activities that do not add value to the product. Wasteful tasks increase costs and reduce competitiveness. To identify and delete wastes, each aspect of manufacturing is analyzed to conform or refute it's value (Adam, 2005: 568).

2.3.7.4 KANBAN Production Information System

A JIT production system uses a particular material withdrawal and work ordering system. This is called the KABAN system. As we were no far noted, the JIT system works, based on the requirement at the final product level. Basically it believes in producing at a time only that many items as were been with drown. This chair of withdrawal and production is continuous from the end product to the beginning process. This is the way the work in process inventory is kept very law. (In the JIT system, in fact, the inventories are not kept in store but on the shop flood, right in between the proceeding and succeeding processes). The with drawal of material from the proceeding process and the production of Kanban (Or maker card). It's physical control system, and is visual in nature which is an advantage over the conventional production control paper work could be quite confusing at times (Chary, 2004: 364).

2.3.7.5 JIT as a Business Philosophy

JIT should not be viewed as a mere production system. It express, in fact, an organizations philosophy of customer orientation. Service to the customer is the focuses of JIT. The production system is a consequence of this business philosophy. Service includes providing to customer the product (necessary service) in time, providing him with quality product, providing him survival product close to him (space quality) and communicating with him more intensely than before almost including him in your own facility or vice versa and above all providing product/service at a price affordable and perceived as reasonable by the customer. Such service-orientation generate the need too an appropriately responsive production system such as a JIT system (Chery, 2004: 36.8).

As the customers are to be provided a variety of products and in time, the production of the finished good should be in very small lots. For the same reason, the upstream production process should also produce equally small lots just to meet the down stream needs. Going upstream in this manner, it is obvious that the vender too were to supply items in small numbers and just in time (Chery, 2004: 36.8).

2.3.7.6 Implication of Just in Time Manufacturing

JIT is a simple theory but hard to achieve in practise. Some organization heritage to implement JIT because wit h no work in process inventory a problem anywhere in the system can stop all production. For this reason, organization that use just in time manufacturing must eliminate all source of facture in the system. The production process must be redesigned so that it is not prohibitively expensive to process one of small number of items of a time. This usually means reducing the distance over which very adaptable people and equipment that can handle all types of job (Amthory, 2001: 204).

As the core of the JIT process is a highly trained work force whose task is to carry out activities using the highest standard and of a quality when the employee discovers a problem with a component he or she has received, it is the responsibility of that employee to call immediate attention to the problem so that it can be corrected. Supplies of the same components to see who can deliver the best quality. At the end of a performance period, the supplier who, performs the best will obtain a long term contract. Preventative maintenance is also employed so that equipment failure is a rate event (Anthory, 2002: 200).

Consider how just in time manufacturing can be used at a food restaurant. Some use a just in time, continuous flow product layout, while others use batch production in a production layout process. In fact, some fast food restaurant combine both approaches into hybrid systems that used batch approach to production and keep inventories at predefined levels. For example, the restaurant may use rocks or bins to hold food ready to be sold to the customers and were employee, start another batch of production when the existing inventory falls below a time drown on the binooracu. At off pear times the restaurant may produce to order (Anthory, 2004: 204-206).

The motivation to use the JIT approach is to improve the quality of the food and to reduce to caste by eliminating the need to discord food that washed in the bin too long. The motivation to use batch production is to sustain a certain level of inventory to reduce the time the customers has to wait for an order. As processing time and set up costs drops, the organization can move closes to just in time manufacturing and reduce the wastes and quality problems that arise with batch production (Anthory, 2004: 206).

2.3.8 Target Costing

Target costing is a customer oriented techniques that is widely uses by Japanese companies and which has recently been adopted by companies in Europe and the USA. The major advantage of adopting target costing is that it is deployed during a product's design and planning stage so that it can were a maximum impact in determining the level of the loaled-in costs (Drury, 2004: 946).

Target costing is the design of a product and the processes used to produce it, so that ultimately the product can be manufactured at a cost that will be enable a firm to make a profit when a product is sold at an estimated marked driven price. Target costing can be critical tool for management as it seeks to strategically manage the company's cost and profits. By ensuring that products are designed so that they can be produced at a low enough cost to be priced competitively, management can achieve or maintain a sustainable competitive position in the market (Hilton, 2002: 670).

Target costing is a tool that has arisen directly from the intensely competitive markets in many industries. Target costing determines the desired cost for a product on the Babes for given competitive price. The firm using target costing must often adopt strict cost reduction measure or redesign the product so manufacturing process by order to meet the market price and remained profitable (Blocher, 1999: 16).

Target costing is method of profit planning and cost management that focuses on products with discrete manufacturing processes. The goal of target is to design costs of products in the RD and stage of a product is life cycle, rather than trying to reduce costs during the manufacturing stage. Target costing is a relevant example of how a well designed MACS can be use for strategic purpose and how critical it is for organization to were chain (Kalupain, 2004: 290).

A major feature of target costing is that a term approach is adopted to achieve the target cost. The team members included designers, engineer, purchasing, manufacturing, marketing, and management accounting personel. Their aim is to achieve the target cost specified for the product at the prescribed level of functionality and quality. The discipline of a team approach ensures that no particular group is able to impose their functional preferences (Drury, 2004: 946).

According to Drury (2004) target costing can be used as a cost management tools, which involves the following stages :

Stags 1 : Determine the target price which customers will be prepared to pay for the product.

Stage 2 : Deduct a target profit margin from the target price to determine the target cost.

Stage 3 : Estimate the actual cost of product.

Stage 4 : If estimated actual cost exceeds the target costs investigate ways of driving down the actual cost to target cost.

2.3.8.1 Target Costing and Kaizen Costing

Target costing is to use kaizen costing and operational control to further reduce costs. Kaizen costing occurs at the manufacturing stage, so that effects of value engineering and improved design are already in place, the role for cost reduction at this phase is to develop new manufacturing methods and to use new management techniques such as operational control, total quality management and theory of constraints to further reduce costs. Kaizen means "continual improvement", that is the forgoing search for new ways to reduce costs in the manufacturing forces of product with a given design and functionality (Blocher, 1999: 138).

2.3.8.2 Life Cycle Costing

Life cycle costing is a management technique use to identy and monitor the cost of a product throughout its life cycle. The life cycle consists of all the steps from product design and purchase of raw materials to delivery and service of the finished product. The step include (i) Research and development, (ii) Product design including protyping target cost, (iii) Manufacturing, inspection and distribution and (v) sales and service. Cost management has traditionally focused only on costs incurred at the third step, manufacturing. Thinking strategically, management accounts now mange the full life cycle of costs for the product, including upstream costs as well as manufacturing costs. The expanded focus means that careful attention is paid especially to product design, science design decebione work in most subsequent life cycle costs (Blocher, 1999: 16).

Life cycles costing estimates and accumulates costs over a product entire life cycle in order to determine whether the profits earned during the manufacturing phase will cover the costs incurred during the pre-add post manufacturing stages. Identifying the costs incurred during the different stage of products life cycle provides and insight into understanding and managing the total costs incurred through out its life cycle. Life cycle costing help management to understand the cost consequence of developing and making a product and two of indenty areas in which cost reduction efforts are likely to be most effective (Drury, 844).

Products today are said to be profitable only when it yields profits over their whole life cycle periods. To know the life cycle profits the costs to be incurred during various periods over the life cycle of the products should be known. Mainly these costs are of the products should be known. Mainly these costs are of two-types by nature cost committed and costs incurred. Cost management is also called licked in costs. These cost, those costs, which were not been incurred but will be incurred in the future on the basis of decebion that has already been taken. The product design specifications in the planning phase determine a products material and labour inputs and production process. At this stage, coat became committed and broadly determine the future costs that will be incurred during the manufacturing stage. Incurred costs are

those costs, which are already been expanded. These occur when a resource is used or scarified. In the manufacturing stage, the majority of costs are incurred costs are incurred early after they are committed. Committed costs cannot be altered. So, before making any cost committed, proper decision should be taken prior in panning phase. Understanding of life cycle costs helps to take right decision in the very beginning (Dahal, 2005: 58).

A typical product's life cycle who five distinct stages. Obviously, not all products will flow this pattern some products will fail early and were a truncated life cycle (Kaplan, 2004: 60).

1. The Product Development and Planning Phase

In this phase, the organization issues significant research and development costs and product testing costs. Traditional costing often treats these costs as general overhead with two consequences. They are not associated with the product that creates the cost, and the total amount of these cost is often either unknown or only vaguely known.

2. Introduction Phase

In this phase, the organization issues significant promotional costs are new product is introduced to the market place. At this stage, the products revenue will often not cover the flexible and capacity related costs that it has inflicted on the organization.

3. Growth Phase

During this phase, the products revenues finally begin the cover the flexible and capacity related costs incurred to produce, market, and distribute the product. There is often little or no price competition. The focus of attention is can developing system or delivers the product to the customer in the most effective way.

4. Product Maturity Phase

In this phase, price competition becomes intense and product margins (the difference between the product revenue and flexible costs) begin to decline. While the product is still profitable, profitability is declining relative to the growth phone, organizations under take intense efforts to reduced costs of remain competitive and profitable.

5. Product Decline and Abandonment Phase

During this phase, the product begins to become unprofitable. Competition begins to drop out the least efficient first. The remaining competition find themselves competition for a share or a smaller and declining market. As organization abandon the product, they incur abandonment costs such as selling off equipment no longer required or restoring an assets prior to abandoning it (i.e.) land reclamation in the case of amine that was worked out and is being abandoned.

From this life cycle; it is apparent that producted related costs occur un evenly over the products life time. This uneven pattern has prompted some people to argue particularly costs other than those associated with making the product and delivering it to the customer, should be considered systematically both before and during the products life time (Kaplan, 2004: 61).

2.3.9 The Balanced Scorecard

With the emergence of the information, era, however, companies needed more than prudent investment in physical assets and excellent management of financial assets and liabilities assets as well as their physical assets. An organizations intangible assets include the following (Kaplan, 2004: 355):

- Loyal and profitable customer relationship,
- High quality process,
- Innovative products and services,
- Employee skill and motivation.

Given the importance of intangible assets, some academic scholars and practioness were tried to expand the financial model to incorporate the valuation of intangible assets and a company's balance sheet, realistically, however, difficulties in placing a reliable financial value on intangible assets will likely prevent them from ever being recognized on a company's balance sheet. Yet there assets are critical for success and manages understand that "if you can't measure it, you can manger it." May manager searched fro a system

that would help them measure and manage the performance of their intangible, knowledge based assets (Kaplan, 2004: 355).

Strategic information using critical success factors provides a roadmap for the firm to use to chart its competitive course, and sense as a benchmark for competitive success.

Financial measures such as profitability reflect only or partial and frequently only short terms measure of the firms progress without strategic information, the firm is likely to stray from it's competitive course, to make strategically wrong product design for example, choosing the wrong marketing and distribution method (Blocher, 1999: 1617).

The balance scorecard (BSC) provides system for measuring and meaning all aspects of a company's performance. The scorecard balance traditional financial measure of success such as profit and return on capital with non financial measures of the drives of future financial performance. The balance scorecard measures organisational performance across four different but linked perspectives that are derived from the organizational vision, strategy and objective (Kalpan, 2004: 356).

- **Financial :** How is success measures by own shareholders ?
- **Internal :** At what, internal processes we excel to satisfy our customer and shareholders ?
- **Learning and Growth :** What employee capabilities, information system, and organizational climate do we need to continually improve our international processes and customer relationship ?

To emphasize the importance of using strategic information, both financial and non financial, accounting report and of a firms performance are how often based can critical success factors in four different dimension. One dimension is financial, the other three dimension are non financial (Blocher, 1997: 17).

i. Financial Perspective

The balanced scorecard retains the financial perspective as the ultimate objectives too profit maximizing companies. Financial performance measures indicate whether the company's strategy, implementation and execution are combibuting to better line improvement. Financial objectives typically relate to profitability measured, for example, by operating income and return on investment the company's financial performance can be improve through two basic approaches revenue growth and productivity. Profitable revenue growth can be achieved by depending relationship with existing customers, such as selling them additional products and services beyond the first product or service they purchase. For example,

banks can attempt to get their checking account customers to also use the bank too mortgages and car loans (Kaplan, 2004: 306).

ii. Customers Perspective

In this perspective of the balanced scorecard, managers identify the targeted customer segments in which the business unit competes and the measures of the business units performance in these targeted segments. The customer perspective typically includes several common measures of the successful out comes from a well formulated and implemented strategy (Kaplan, 2004: 362).

- Customer satisfaction
- Customer retention
- Customer acquisition
- Customer profitability
- Market share
- Account share

iii. Internal Perspective

Once an organization has a clear picture of its financial objectives and customer objectives, it can determine the means by which it all.

- Produce and deliver t he value proposition for customer and
- Achieve the productivity improvements for the financial objectives.

The internal perspective of a balanced scorecard identives the critical progress in which the organization must excel to achieve its customer, revenue growth, and profitability objectives (Kaplan, 2004: 365).

Organization perform many different process. It is useful to think of processes within four groupings (Kapaln, 2004: 365).

1. Operating process,
2. Customer management process,
3. Innovation process.
4. Regulatory and social process.

iv. Learning and Growth Perspective

The fourth perspective of the balanced scorecard, learning and growth, identifies the objectives for the people, systems, and organizational alignment that create long-term growth and improvement. For the learning and growth perspective, manages define the employee capabilities and skills, technology, and organizational aligment that will contribute to improve performance in the measure selected in the first three perspectives. They learn where they must invest to improve the skills of their employees, enhance information technology and system, and align people to the company's objective (Kaplan, 2004: 373).

The learning and growth perspective of the scorecard identifies how executives mobilize their intangible assets-human, information, and organizational to dricle improvement in the internal processes most important for implementing their strategy. The following describes some typical objectives for these three components of the learning and growth, perspective (Kaplan, 2004: 374).

- Employee capabilities
- Information capabilities
- Organizational alignment.

2.4 Review of Previous Related Studies

Dahal R.P. (2005) has made study on "Cost reduction tools: A study on applying to strength manufacturing enterprises of Nepal." An published master level these submitted to faculty of management T.U. His study has down the following findings and recommendation:

Findings

- The main reason behind less use to JIT in Nepalese business environment in lack of information about JIT and non-availability of supplies.
- There is the lack of skilled man power and internal failure cost in applying TQM .
- The more useable cost reduction tools in business enterprises is training.
- The main cause of not applying benchmarking is lack of proper direction and coordination.
- And the constraint causes of ABM is poor organization culture.
- Nepalese manufacturing firms believe in scientific management of cost.

Recommendation

- Japanese cost management tools should be widely used. And firms were to think how to make the practice effective.
- Specially, the electric firm, textile companies and engineering firms should give effort for JIT application.
- Firms should keep on benchmarking other's practise and being corresponding practice to their own ground.
- Firms should manage the activities with cost.

Paudel, S.P. (2007) had made study about "Cost reduction tools: A study on applying to strength manufacturing enterprises of Nepal." An published Master level thesis submitted to Nepal Commerce Campus faculty of management, T.U. His study has shown the following finding and recommendations.

Findings

The research work were found that about 50.59 percent of the firms are practicing cost management/reduction. Research made among the firm's has drown that existing cost reduction practise is different between the sectors were practicing cost reduction, which is the highest among all the sub-sectors. Similarly, about 61.11 percent of he textile firms were found practicing cost reduction. Hence, there is lack of mass participation for cost reduction practise in the manufacturing sector.

Similarly, cost reduction strategy were found not equally applied in Nepalese manufacturing sector. Among the strategy taken as stud variables, training program was found widely applied. About 92 percent of the samples taken were found conducting training programs. The second highest cost reduction tools being applied was found benchmarking (79.56 percent of the sample), and subsequently, in-audit, ABM, TQM, VA) reengineering. Target costing, life cycle costing, time and motion study, JIT disten low practise to time and motion study is due to lack of study equipments. JIT system was slowly practiced due to lack of good relationship with the supplies. Similarly, Kaizen costing is being lowly practiced due to lack of kaizen efforts from the employees.

Recommendations

The cost reduction should be accompanied by man production and wide distribution as well. Based on the finding/conclusions of this research works following recommendation were been forwarded for Nepalese manufacturing sector for effective cost reduction purpose.

- Moden Japanese cost management tools should be widely used. Firm were to think how to make the practise effective. For this they were to find out each and every cause for in effective practise and preventive measures should be taken.

- In the present context, firms were to give enough strength to relationship with the supplies and give a way out for easy application JIT system. Specially, the electric/electronic firms textile companies and engineering firm should give efforts for JIT system application.

- Firms should keep can benchmarking other's effective practices and bring corresponding practise to their own ground.

- Automated technologies were to be widely used. Firms should shift to automated and group technologies mean the age old manual and obsolete mechanized technologies

- Management auditors were to conduct audits or varied areas and give improvement suggestions.

- Engineering firms should give a break through practice to target costing FBT and chemical firms are suggested to give high efforts to target costing team than the top management.

- Employees of the firms should be motivated so that they shall give full kaizen.

- Firm should the activities with cost.

- The project should be analyzed in a way so that it turns profitable through the project life. Hence, firms are suggested to use life cycle costing measure.

Firms are suggested to conduct time and motion study in their work place. However, unnecessary movement observed and recorded should be corrected with perceptive motivation to the employees for kaizen efforts.

Karki, G.R. (2008) has made study about "Practise of cost reduction tools and techniques in selected Nepalese manufacturing organization." An published Master level thesis submitted to Central Department Faculty of Management T.U. And his study has shown the following findings and recommendation.

Major Findings

After discussion of the different aspect of cost reduction tools and technique major findings can be listed out as following :

- The major cause of suffering the loss by Nepalese manufacturing companies is due to lack of proper supervision and management.

- The companies are trying to achieve objectives by means of increasing selling price. They are trying to reduce the purchasing cost by means of managing cost in proper way.

- Majority of the companies are not applying the system properly, Nepalese manufacturing companies should establish the long term stable relationship with the employees.

Bhandari, S.P. (2009) has conducted a research on "Cash management in public enterprises of Nepal: A case study of Nepal Telecom Ltd." An published master level thesis submitted to Public Youth Campus, Faculty of Management, T.U., Kathmandu."

The Objectives of the study are as follow:

2.5 Research Gap

The conclusion of those researches is that there is no proper planning and control system in Nepalese propose enterprises. Therefore this study is designed to highlight the comprehensive budget process and its impact on profitability. Previous study has not been yet made emphasizing the effect of budgeting and profit planning on the profitability. This research work covers time period of one year for the purpose of trend analysis. So this study will be fruit full to those interested scholar, students, teacher, civil society, share holders, businessman and government for academically from the findings and conclusion. It's recommended to using cost reduction tools effectively. For this they were to train their employees to use such tools. They were to collect information about success of Japanese organization by applying cost reduction tools. JIT system has not been applied by any organization, so it is necessary to use JIT system in the context of Nepalese manufacturing organizations based on Kathmandu valley. Most of organization Bation perform to increase in volume and reduction in operating cost for maximizing profit of the organization. Most of the organization prefer managing the cost scientifically for the purpose of lowering the operating cost and consequently the price of products Nepalese manufacturing organization are facing high cost problem in various sectors the major section are producing planning and control, advertising and selling and distribution areas.

CHAPTER - III
RESEARCH METHODOLOGY

3.1 Introduction

The prime objective of the present study is to identify the condition of application of cost reduction tools in Nepalese manufacturing organization. It will draw out how man organizations are applying such strategy. Why others are not applying such tools ? The research methodology adopted for the present study has been out lined in this chapter which deals with research design, source of data, population and sampling, data collection procedure, data analysis procedure.

3.2 Research Design

Keeping in mind the objectives of the study, descriptive cum analytical research design has been followed. It is descriptive in the sense that it clarifies different aspects of cost reduction. It tries to search the qualitative and quantitative aspects of cost reduction especially in Nepalese manufacturing organization. It's analytical in the sense that it uses different analytical tools to show the respondents view towards the use of some famous tools and techniques in Nepalese manufacturing organizations.

3.3 Source of Data

The main source of data for this study is primary. The information has been collected through unit visits. It, therefore, means that primary data have been collected. Questionnaire with multiple-choice answers was prepared before the visit, and distributed during the visit to the unit under study.

3.4 Population and Sampling

All the manufacturing organization established and operating in with their head office at Kathmandu valley and where the manufacturing organizations of Kathmandu, Laliitpur and Bhaktpur have been taken as population of this study. The sample has been taken by using stratified, convenient, random and judgemental (purposive) sampling procedure from the CG group and plastic and from Balaju Industrial area.

- Food and Beverage : Balaju at Kathmandu
- Iron and Steels : Patan Industrial Area, Lalitpur
- Plastic and Foan : Balaju Industrial Area
- Liquors : Kathmandu Industrial Area

- Shoes : Bhaktpur

All those manufacturing organization having Kathmandu based head office and contact offices have been taken as target population. Out of target population at least 5 organization have been sampled selecting was two samples from each state. The manufacturing companies are shoes place in New Road, plastic and form Balaju Industrial area and Patan manufacturing area. And Irons and Steels are manufacturing by Panchakenya group company in Kathmandu valley a well as.

Plastic recycling and manufacturing Pvt. Ltd. At Bhaktpur, Kamalbinayak. Comfort foot wear manufacturing industries at Bhaktpur. Byaai and smart foot wear Ghantaghar, Bhaktapur.

3.5 Data Collection Procedure

For the collection of the necessary data, questionnaires and schedules were distributed to the respondents of the sample firms. Answer, received therefore, have been changed into numerical data. Respondents are offered for multiple answers to the questions.

3.6 Data Analysis Procedure

The collection information has been tabulated in a frequency distribution for the purpose of data presentation, analysis and extract of findings. As the respondents are given opportunities for giving more than just cone answer to the questions, the column of tools reflects sampled organizations from each sub-sectors and the row total shows the total number of organization choosing a particulars answer. For the analysis of data, percentage analysis method has been adopted.

3.7 Testing of Hypothesis

The hypothesis taken in the research is that the cost reduction practices among the sub-sectors and among the tools of reduction is identical. For this purpose, f-test (two group ANOVA) test has been conducted choosing and particular answer.

3.8 Research Variables

This search has been conducted using the following research variables.

a.	Bench marking	f.	Life cycle costing
b.	KATZEN	g.	JIT system
c.	ABC	h.	Balance scorecard
d.	Target costing	i.	Theory of constraints

e. Reengineering

CHAPTER-IV

DATA PRESENTATION AND ANALYSIS

4.1 Cost Reduction Practice in Nepal

4.1.1 Profit and Wealth Maximization Practice

A survey was conducted fifteen manufacturing organizations in Kathmandu valley to explore about how they are trying to maximize profit cum wealth objective. The following results have been found

Table: 4.1

Profit cum Wealth maximization practice sub sector wise observation

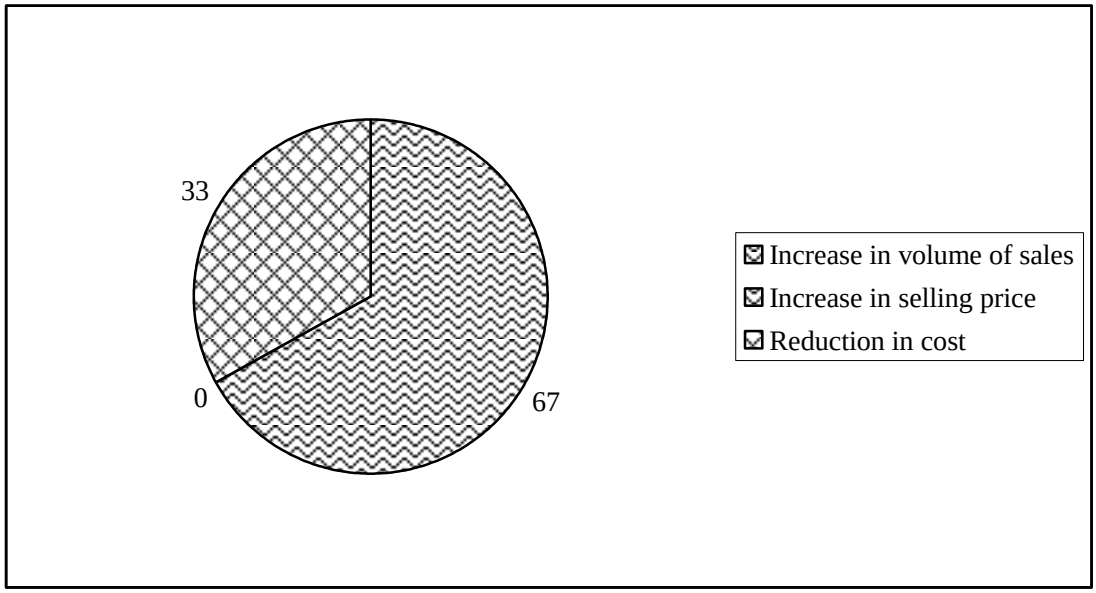
Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Increase in volume of sales	2	2	2	2	2	10	67
Increase in selling price	-	-	-	-	-	-	0
Reduction in cost	-	1	3	2	-	5	33
Total	2		5		2	15	100

Source: Field Survey, 2011.

The above data can be presented with the help of following Pie-Chart:

Figure: 4.1

Profit cum wealth maximization practice sub sector wise observation



Out of fifteen manufacturing organizations sampled, ten (i.e. 67%) have been found going for increasing the volume of sales. And 5 (i.e. 33%) have been found emphasizing reduction in their costs for maximization profit cum wealth. And it is found that no organizations are for increase in their selling price.

Based on the above, it can be analyzed that most of Nepalese manufacturing organizations want to maximize their sales volume. They think that there is no problem in case of sales because demand exceeds he supply. So, it is good to maximize sales volume. Similarly, 33% organizations want to reduce in cost to maximize their profits cum wealth.

4.1.2 Managing Lower Price of Products

Study over those fifteen manufacturing organizations reveal the current results regarding the current practice of these organizations for setting lower price of their product.

Table: 4.2

Measures applied for lowering price of products: sub-sector wise observation

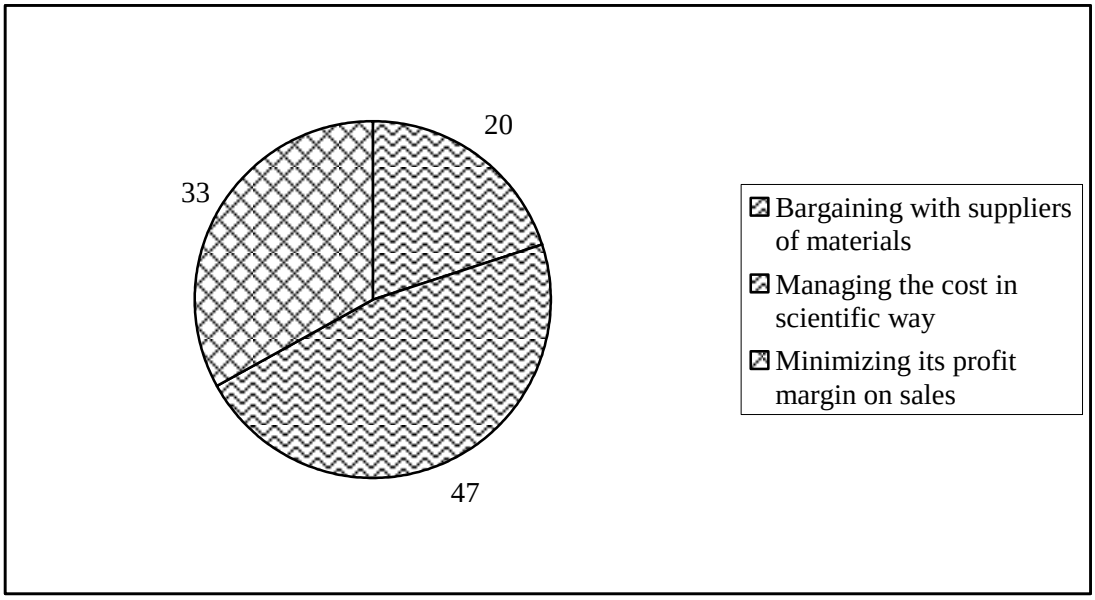
Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Bargaining with suppliers of materials	1	1		1	-		20
Managing the cost in scientific way	1	1	3	2	-	7	47
Minimizing its profit margin on sales	-	1	2		2	5	33
Total	2	3	5	3	2	15	100

Source: Field Survey, 2011.

The above data can be presented through following pie chart.

Figure:4.2

Measures applied for lowering price of products: sub-sector wise observation



The above table & figure shows that 47% manufacturing organizations sampled are favoring scientific cost management technique. About 20% organizations arc also found bargaining with their material suppliers for managing low cost material. Similarly, 33% organizations are also have found going for minimizing the profit margin on sales.

Based on the above, it can be analyzed that the bargaining with suppliers for material plays less important role, to reduce cost. Most of the sampled organizations import their raw materials from foreign country. So it is harmful for them to bargain for material price.

4.1.3 Areas Selected for Cost Reduction

There are many areas which are required to apply the cost reduction program. A survey was conducted to gather information about areas on which organizations are suffering from cost related problems and applying cost reduction programs. The study revealed the following results.

Table: 4.3

Areas selected for Cost Reduction

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Product	-						

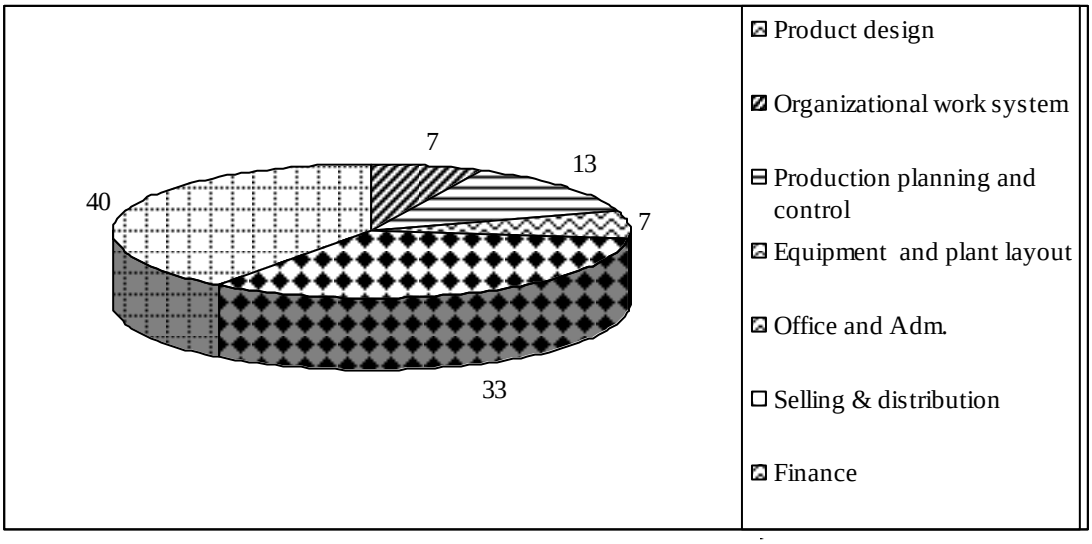
design							
Organizational work system	-		l			I	7
Production planning and control	-	1	l				13
Equipment and plant layout	1						7
Office and Adm.			-			-	
Selling & distribution	-	2	1	2		5	33
Finance	-		-			-	
Purchase of materials and control	1		2	1	2	6	40
Total	2	3	3	3	2	15	100

Source: Field Survey, 2011.

The above data can be presented through following pie chart.

Figure: 4.3

Areas selected for Cost Reduction



The above result shows that most of manufacturing organizations have been Suffering from purchase of materials and control of cost i.e. 40% organizations consider it as the selected area for cost reduction program. Similarly 7% organizations are suffering from organizational work system cost and equipment and plant layout cost. Least cost involved areas are considered as product design. Administrative and finance cost are not problems for sampled organizations.

Based on the above, it can be analyzed that no organizations give the priority for product design because they are giving continuity for same product for years. They can control the administrative cost and do riot have high finance related cost. So it is not necessary for them to select tile cost reduction program in these areas.

4.1.4 Application of Cost Reduction Tools

As described earlier, there are various types of cost reduction tools, which are using ; by Japanese manufacturing organizations at present. This study deals whether Nepalese manufacturing organizations are applying thee cost reduction program or not. If they are not applying such tools then it reveals tile causes for it.

4.1.4.1 Application of JIT System

Table: 4.4

Application of JIT System: Sub-Sector Wise Observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Applying (Yes)	-	-	-	-	-	0	0
Not Applying (No)	2	3	5	3	2	15	100
Total	2	3	5	3	2	15	100

Source: Field Survey, 2011.

The study reveals that 100% organizations are not applying JIT system as cost reduction tools. It means that application of JIT system in Nepal is likely to be impossible. The main cause for it is non availability of supplier

Table. 4.5

Practical Difficulties in Application, of JIT System Sub Sector Wise Observation

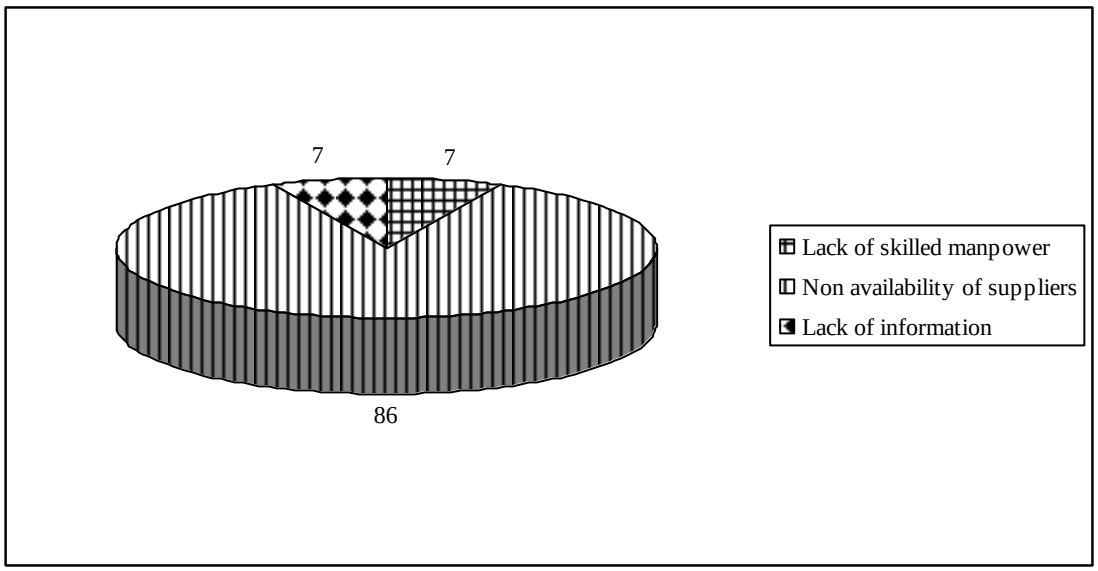
Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Lack of skilled manpower	-	-	1	-	-	1	7
Non availability of suppliers	2	3	3	3	2	13	86
Lack of information	--	-	1	-	-	1	7
Total	2	3	5	3	2	15	100

Source: Field Survey, 2012.

The above data can be presented through following pie chart.

Figure: 4.4

Practical Difficulties in Application of JIT S4stem: Sub Sector Wise Observation



The above table and pie-chart shows that 86% manufacturing organizations are not applying JIT due to non availability of suppliers. 7% organizations think that lack of skilled manpower is the main cause for it. And 7% organizations think that they are not applying JIT tool because they do not have any idea about it.

4.1.4.3 Application of Target Costing

The status of application of Target Costing in Nepalese manufacturing organizations can he presented as follows.

Table: 4.7

Application of Target Costing: Sub Sector Wise Observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Applying	2	3	3	3	0	10	67
Not Applying	-	1	2	-	2	5	33
Total	2	3	5	3'	2	15	100

Source: Field Survey, 2012.

The study reveals that 67% manufacturing organizations are applying Target Costing. Whereas 33% manufacturing organizations are riot applying Target Costing.

Table: 4.8

Practical Difficulties for Applying Target Costing: Sub Sector Wise Observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Lack of skilled manpower	-	1	1	-	-	2	40
Lack of information	-	-	1	-	2	3	60
Lack of top management support	-	-	-	-	-	-	-
Total	-	1	2	-	2	5	100

Source: Field Survey, 2012.

The above data shows that only five organizations are not applying Target Costing tool whereas 10 organizations are applying. The practical difficulties for not applying the Target Costing tool are lack of skilled manpower and lack of information. Out of them 40% organizations are facing the problem of skilled manpower and 60% are facing the problem of information.

4.1.4.4 Application of Benchmarking

The status of application of Benchmarking in Nepalese manufacturing organizations can be presented as follows.

Table: 4.9

application of Benchmarking: sub sector wise observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Applying	2	3	5	3	-	13	87
Not Applying	-	-	-	-	2	2	13
Total	2	3	5	3'	2	15	100

Source: Field Survey, 2012.

The above data shows that 87% manufacturing organizations are practicing the Benchmarking system . It means, there is high competition among the organizations. Only 13% organizations are not applying the Benchmarking. Two shoe manufactures are not applying Benchmark pricing because they thought that the

demand is higher than the supply. So, it is not necessary to provide low price shoes in the market. They said that it was not necessary to follow such reduction tools.

Application of KAIZEN Costing

For knowing whether Nepalese firms conduct KAIGEN efforts in the area of cost reduction or not, the study reveals the following results:

Table: 4.10

Application of KAIZEN Costing: sub sector wise observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Applying	1	1	1	1	-	4	27
Not Applying	1	2	4	2	2	11	73
Total	2	3	5	3	2	15	100

Source: Field Survey, 2012.

'['he data reveals that 27% manufacturing organizations are using KAIGEN costing. But most sampled organizations (i.e. 73%) are not using KAIZEN Costing. It shows that Nepalese manufacturing organizations are riot conscious about KAIZEN casting.

Table: 4.11

Practical Difficulties in Applying KAIZCN Costing: Sul) Sector Wise Observation

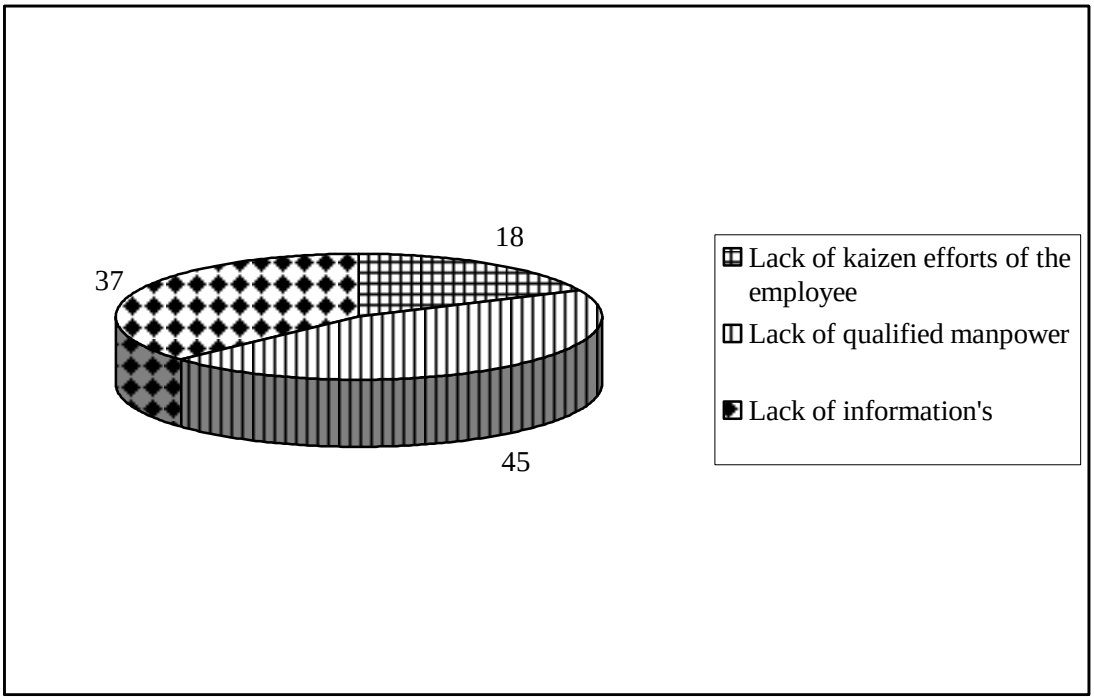
Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Lack of kaizen efforts of the employee	-	1	-	1	-	2	18
Lack of qualified manpower	1	1	2	1	-	5	45
Lack of information's	-	-	2	-	2	4	37
Total	1	2	4	2	2	11	100

Source: Field Survey, 2012.

The above data can be presented through following Pie-Chart:

Figure: 4.5

Practical Difficulties in Applying KAIZEN Costing



The above table 4.1 shows that 18% organizations are not applying the KAIZEN costing due to the lack of KAIZEN efforts of the employees, 45% manufacturing organizations are facing the difficulty of qualified manpower where as 37% manufacturing organizations do not have proper information about KAIZEN.

4.1.4.5 Application of Activity Based Manager-lent

The study made for knowing whether or not Nepalese manufacturing organizations arc conducting ABM for reducing their cost, the data reveals the following facts:

Table : 4.12

Application of Activity Based Management: sub wise observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Applying	2	3	4	2	2	13	87
Not Applying	-	-	1	1	-	2	13
Total	2	3	5	3	2	15	100

Source: Field Survey, 2012.

The above table 4.12 shows the 87% manufacturing organizations are applying Activity Based Management is cost reduction tool. It shows that most of organizations can define their activities clearly and they are able to reduce their cost by using ABM activity. Only 13% organizations are not applying such tool.

4.1.4.6 Application of Life Cycle Costing

Most of Japanese manufacturing firms use life cycle costing before adopting any big project. Life Cycle Costing helps to reduce the overall cost of the project throughout the life of the project by selecting a best costing option. Reviewing the high success of Japanese firms, it is sic-significant here to identify status of Life Cycle Costing practice in Nepalese manufacturing sector. Following facts are revealed:

Table: 4.13

Application of Life Cycle Costing: sub sector NAse observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Applying	1	1	3	2	2	9	60
Not Applying	1	2	2	1	-	6	40
Total	2	3	5	3	2	15	100

Source: Field Survey, 2012.

The above table 4.13 shows that only 60% manufacturing organizations are applying Life Cycle Costing to reduce cost and only 40% organization are riot applying life cycle costing. Comparatively, there is no high l~ difference between the organizations applying and riot applying the tool. It indicates that, lower portion of organizations are not applying the Life Cycle Costing

Table: 4.14

Practical Difficulties in Applying Life Cycle Costing: sub sector wise observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Lack of information	-	-	2	1	-	3	50
Lack of top management support	-	-	-	-	-	0	0
It does not help to cost reduction	1	2	-	-	-	3	50
Total	1	2	2	1		6	100

Source: Field Survey, 2012.

The above table 4.14 shows that 6 organizations are not applying the cost reduction tool. Out of them, 3 organizations i.e. 50% are facing the problems of lack of information and 3 organizations i.e. 50% think that Life Cycle Costing does riot help in regarding cost. And none of organizations think that they do have problem of top management support.

4.1.4.7 Application of Reengineering as Cost Reduction Tool

Reengineering is the change of production process. When a process technology r seems more consuming or ineffective or ineffective or time consuming, it needs change. It is called Reengineering process technology. In the context of Nepalese manufacturing organizations, these facts are identified:

Table: 4.15

Application of Reengineering: sub sector wise observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Applying	2	2	2	3	-	9	60
Not Applying	-	1	3	-	2	6	40

Total	2	3	5	3	2	15	100

Source: Field Survey, 2012.

The above table 4.15 shows that 60% organizations arc applying Reengineering as cost reduction tool where as 40% organizations are not applying Reengineering as cost reduction tool. It can be said that there is a big problem in applying Reengineering as cost reduction tool. Out of fifteen organizations, nine, organizations are applying the tool and six organizations are not applying reengineering as cost reduction tool.

Table: 4.16

Practical Difficulties in Applying Reengineering: sub sector wise observation

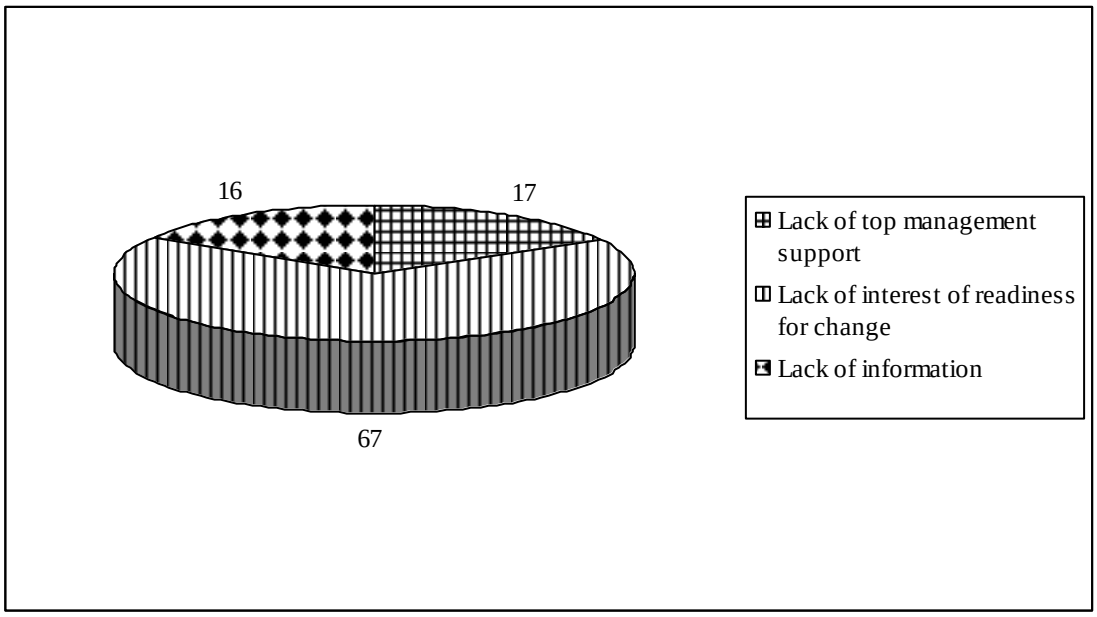
Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Lack of top management support	-	-	1	-	-	1	17
Lack of interest of readiness for change	-	1	1	-	2	4	67
Lack of information	-	-	1	-	-	1	16
Total		1	3		2	6	100

Source: Field Survey, 2012.

The above data can be presented by following pie-chart.

Figure: 4.16

Practical Difficulties in Applying Reengineering



The above table 4.16 shows that 67% manufacturing organizations applying the Reengineering as cost reduction tool due the lack of interest. of readiness for change. And 17% organizations -ire facing the difficulty of lack of top management support. Whereas, 16% organizations do not have proper information's. So, it can be said that most of organizations are not ready to adopt new production system.

4.1.4.8 Application of Theory of Constraints

The study made for knowing whether or not Nepalese manufacturing organizations are conducting Theory of Constraints as cost reduction tool, the following data are revealed:

Table: 4.17

Application of Theory of Constraints: Sub Sector Wise of Observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Applying	2	3	-	-	-	5	33
Not Applying	-	-	5	3	2	10	67
Total	2	3	5	3	2	15	100

Source: Field Survey, 2012.

The above table 4.17 shows that 67% manufacturing organizations are not applying Theory of Constraints as cost reduction tool. Only 33% organizations are applying such tool. It means that only few organizations are constraints about using of Theory of Constraint. Most of organizations are not about Theory of Constraint.

Table 18

Practical Difficulties in Applying Theory of Constraint: sub sector Wise observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Lack of knowledge	-	-	5	3	2	l()	100
Lack of top management support	-	-	-	-	-	0	0
Not applied by other organizations	-	-	-	-	-	0	0
Total	0	0	5	3	2	10	100

Source: Field Survey, 2012.

The above table 4.18 shows that ten organizations are facing practical problems in applying Theory of Constraints. Out of ten organizations, ten organizations, i.e. 100% do not have proper knowledge about Theory of Constraints. So, knowledge of TOC is the main problem to apply this tool for reducing Cost.

4.1.4.9 Application of Balance Scorecard

Study of these fifteen manufacturing organizations shows the following results regarding the current practice of these organizations for the application of Balance Scorecard.

Table: 4.19

Application or Balance Scorecard: sub sector i0se observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Applying	1	1	-	-	-	2	13
Not Applying	1	2	5	3	2	13	87
Total	2	3	5	3	2	15	100

Source: Field Survey, 2012.

The above table 4.19 shows that thirteen organizations i.e. 87% of total sampled organizations are not applyinc7 Balance Scorecard. It can be said that most of the organization are riot applying Balance Scorecard as cost reduction tool.

Table: 4. 20

Practical Difficulties in Application of Balance Scorecard: Sub Sector Wise Observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Lack of knowledge	1	2	5	3	2	13	100
Lack of top management support	-	-	-	-	-	0	0
Lack of information	-	-	-	-	-	0	0
Total	1	2	5	3	2	13	100

Source: Field Survey, 2012.

The above table 4.20 shows that 100% organizations are facing practical problems to use Balance Scorecard clue to lack of knowledge. They do not have proper knowledge about balance scorecard.

4.1.4.10 Management View Regarding Necessity for Applying Cost Reduction Tools in organizations

The survey made for knowing what the top managerial level think, the necessity for applying cost reduction tools in organizations reveal the following results:

Table: 4.21

View Regarding Necessity for Applying Cost Reduction Tools: Sub Sector Wise Observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total	
						No.	%
Yes	2	3	5	3	2	15	100
No	-	-	-	-	-	-	0
Total	2	3	5	3	2	15	100

Source: Field Survey, 2012.

The above table 4.21 shows that 100% organizations have positive views regarding application of cost reduction tools. No one of them think that such tools cannot be helpful to reduce the cost of organizations.

4.2 Testing of Hypothesis

The hypothesis is that application of cost reduction tools is identical i.e. no significant difference among sub-sectors and among tools of cost reductions.

The total numbers of sampled manufacturing organizations are fifteen from different sub sectors. From Food and Beverage sub sector total two organization were sampled, where three organizations were sampled from each Liquors and Irons and Steels sub sector. Similarly, five organizations were sampled front Plastics and Foam and two organizations were sampled From Shoes sub sector.

To give equal justice to all sub sectors, LCM has been computed which comes 30. Then weight has been calculated dividing that 30 by the number of samples from each particular Sub sector and assigned to them. Based on the weight assigned, the data regarding the number of organizations from different sub-sectors applying different cost reduction tools has been restructured. The works have been shown in the restructured data as follows:

Table: 4.22

Data Regarding Number of Organizations from Different Cost Reduction Tools: Sub Sector Wise Observation

Particulars	Food & Beverage	Irons & Steel	Plastics & foam	Liquors	Shoes	Total

JIT System (X1)	0	0	0	0	0	0
TQM Approach (X2)	30	30	30	30	30	150
Target Costing (X3)	30	20	18	30	0	98
KIAZEN (X4)	15	10	6	10	0	41
ABM (X5)	30	30	24	20	30	114
Reengineering (X6)	30	20	12	:30	0	92
TOC (X7)	30	30	0	0	0	60
Life Cycle Costing (X8)	15	10	18	20	30	93
Balance Scorecard (X9)	15	10	0	0	0	25
Benchmarking (X10)	30	30	30	30	0	120
Total	225	190	138	170	90	813

Source: Field Survey, 2012.

Assuming level of significance is 5%

i) Null Hypothesis: H_0: $\pi_A = \pi_B = \pi_C = \pi_D = \pi_E$

(i.e. there is no significant differences by sub sector areas)

Alternative Hypothesis: H_1:$\mu_1 \neq \mu_A \neq \mu_B \neq \mu_C \neq \mu_D \neq \mu_E$

(i.e. there is significant differences by sub sector areas)

ii) Null Hypothesis: H_0:$\mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 = \mu_6 = \mu_7 = \mu_8 = \mu_9 = \mu_{10}$

(i.e. there is no significant differences by types of cost reduction tools)

Alternative Hypothesis: H_1:$\mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \neq \mu_6 \neq \mu_7 \neq \mu_8 \neq \mu_9 \neq \mu_{10}$

(i.e. there is significant differences by types of cost reduction tools)

All values are presented below

Table: 4. 23

Two-Way ANOVA Table

Source of variation	Degree of freedom	Sum of squares	Mean sum of square	F-Ratio
Due to column factor	5-1=4	1057.52	264.38	Fc=3.63
Due to row factor	10-1=9	4176.42	475.16	Fr=6.27
Due to error	4×9=36	2625.68	72.94	

Sources: Appendix.

i) The variance ration for column/sub sector is 31.63. 7'hi critical value of F at 5% level of 5ionificance for (4,36) d.f. is 2.66

Decision: Since, the calculated value of F is greater than the tabulated value for (4,36) d.f. Thus, Null Hypothesis is not accepted. Therefore, it is concluded that application of cost reduction tools is not identical among sub sectors.

ii) The variance ratio for row/cost reduction tools is 6.27. The critical value of F for (9,36) d.f. is 2.16.

Decision: Since, the calculated value of F is greater than the tabulated value for (9,36) d.f. Thus Null Hypothesis is not accepted. Therefore, it is concluded that application of cost reduction tools is not identical among cost reduction tools.

4.3 Percentage of Applying and not Applying Cost Reduction Tools

Table : 24

Percentage of Applying and not Applying Cost Reduction Tools: Tools Wise Observation

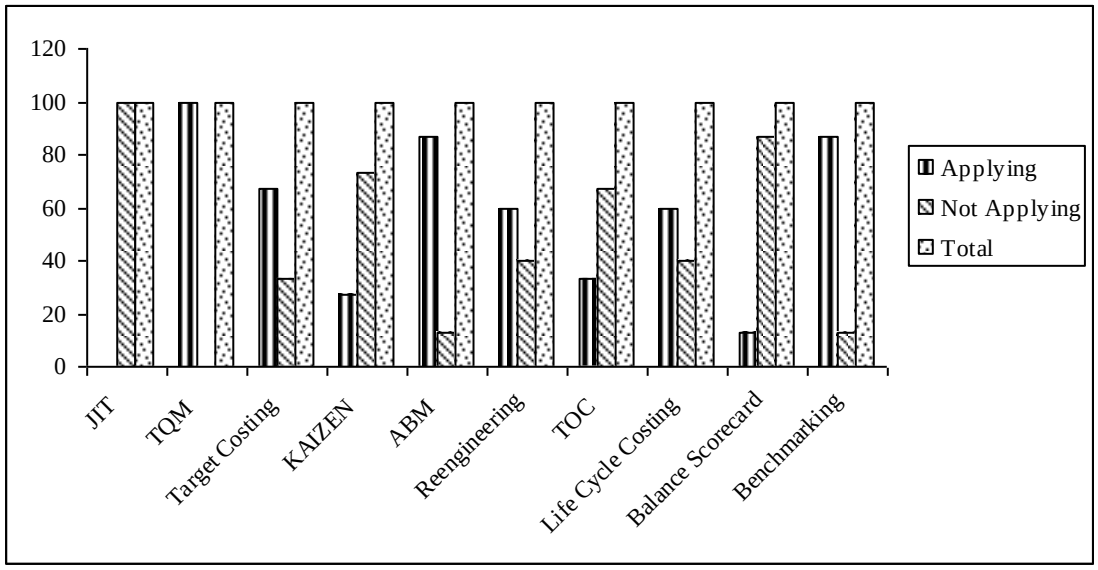
Tools	Applying	Not Applying	Total
JIT	0	100	100
TQM	100	0	100
Target Costing	67	33	100
KAIZEN	27	73	100
ABM	87	13	100
Reengineering	60	40	100
TOC	33	67	100
Life Cycle Costing	60	40	100
Balance Scorecard	13	87	100
Benchmarking	87	13	100

Source: Field Survey, 2012.

The above table 4.24 can be presented by following Bar-Diagram

Figure: 4.7

Percentage of Applying and not Applying Cost Reduction Tools: Tools Wise Observation



The above figure 4.7 shows the individual position of cost reduction tools. JIT system has not been applied by any organizations. TQM has been applied by all organizations. And other facts are shown on above figure.

4.4 Percentage of Applying and not Applying Cost Reduction Tools

Table: 415

Percentage of Applying and not Applying Cost Reduction Tools: Overall Observation

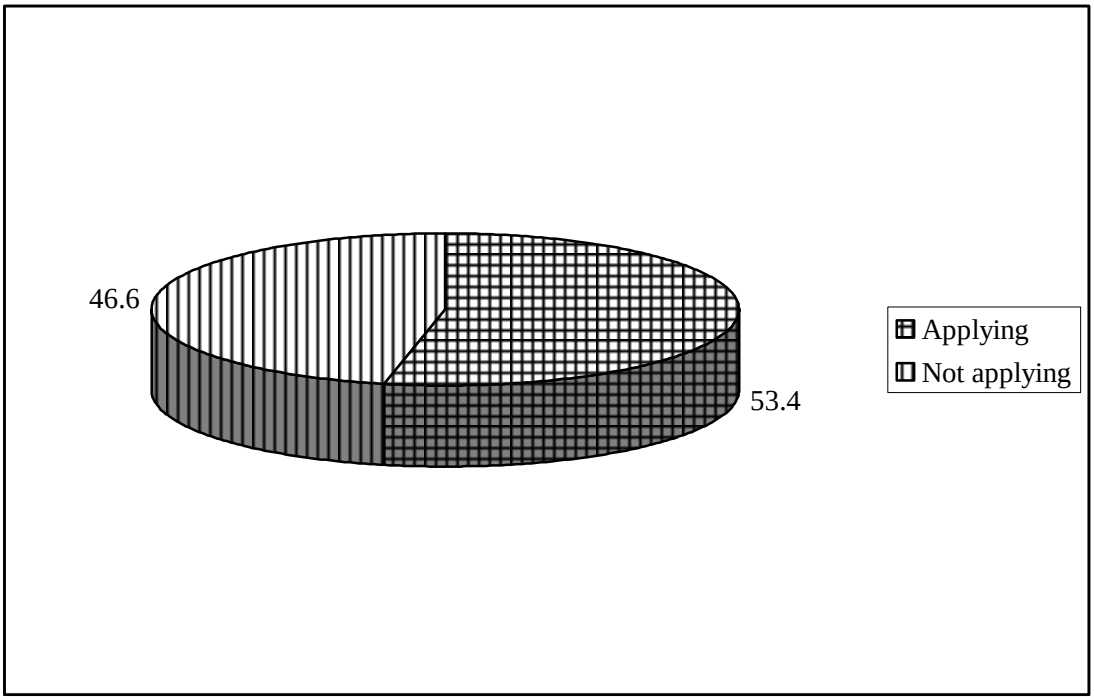
Particular	Percentage
Applying	53.4
Not applying	46.6
Total	100

The above table 4.25 shows the percentage of applying cost reduction tools sampled in fifteen organizations is 53.4% and the percentage not applying cost reduction tools is 46.6%.

The above data can be presented by following Pie-chart.

Figure : 4.8

Percentage of Applying and not Applying Cost Reduction Tools: Overall Observation



The above figure 4.8 shows that 53.4% organizations are applying cost reduction tools whereas 46.6% organizations are not applying cost reduction tools.

4.5 Major Findings

The research works related to Application of Cost Reduction Tools is Nepalese manufacturing organizations based on Kathmandu valley have found the following facts:

- It is found that 53.4% cost reduction tools are being applied by manufacturing organization at present and 46.6% tools are not being applied.
- It is found that 100% manufacturing organizations are not applying JIT system as cost reduction tools at present. Most of the firms (i.e. 86%) think it is due to non availability of suppliers.
- It is found that 67% manufacturing, organizations ire applying Target Coming as cost reduction tool and 33% *:we* not applying. The main cause for not applying Target Costing is lack of information (i.e. 60%) and secondary Cause is lack of skilled manpower.
- Only 27% organizations are applying KAIZEN system as cost reduction tools. It is found that Khajuriko Nepal Pvt. Ltd is selected as model organizations using KAIZEN costing in Kathmandu valley. It is also found that Nevico Pvt. Ltd. Used KAIZEN for 3 years only. But now, it is not using due to lack of top management support.

- Most of organizations (87%) are applying ABNI as cost reduction tool. The main cause that they are not applying ABM, is difficulties in defining activities.

- It is found that the percentage ration between applying and, not applying Reengineering and Life Cycle Costing as cost reduction tool is 60:40. The practical problems in applying such tools are lack of proper information, lack of skilled manpower.

- 33% organizations are applying TOC as cost reduction tools and 13% organizations are applying balance scorecard as cost reduction tools. These tools are totally new for Nepalese manufacturing, organizations.

- It is found that 87% Nepalese manufacturing organizations are applying benchmarking as cost reduction tool. Only 13% manufacturing, organizations are not applying benchmarking.

- It is found that sent percent organizations think application of cost reduction tools help to reduce cost scientifically.

- It is also found from research work that 67% manufacturing organizations think that increase in volumes of sales maximize profit cum wealth. And only 33% organizations think that reduction of cost scientifically helps to maximize profit cum wealth maximization objectives.

- Similarly, 47% manufacturing organizations believe that management of the cost in a scientific way helps in lowering the price of product to Customer. 33% of the organizations minimize the profit margin on sales. 20% of the organizations bargain with suppliers for lowering the price of proq4as.

CHAPTER-V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

Most of organizations are facing throat cutting competition in today's business environment. A single mistake can he the main cause to lose whole market share. That may be the cause of organizations. So, running of any business organization Successfully is very challenging.,, job nowadays. After industrialization, American and European countries established Multinational companies around the world in search of materials for productions. Though lack of materials for production for their companies, these countries have maintained low cost of production.

Nepalese manufacturing organizations are facing the problem of high cost of materials and lack of materials. Similarly, they also do not have proper knowledge d management and other ideas about running the business successfully. High cost of production is headache of Nepalese manufacturing organizations. There are lots of tools and techniques to reduce the cost of productions. Most of tools have been innovated by Japanese manufacturing organizations. And these tools are being, applied by Japanese manufacturing organizations at present. So, we must understand that the key of success of Japanese organizations is proper application of such tools. This research work has been done with the objective of identifying the current state of the application of cost reduction tools in Nepalese manufacturing organization, pointing out the finding the practical difficulties for applying cost reduction took in Nepalese manufacturing organizations and providing suggestions for the application of cost reduction tools to organization as well as to government.

As Nepal has entered into WTO membership and has signed the protocol of SAFTA, it has to liberalize its market and resultantly the products of foreign manufacturing organization freely move id din the country. Hence, Nepalese nmnufactu6ng organizations have to further complete with their foreign competitors. The work for the country is now for making Nepalese products cheaper than imported products. This necessitates cost reduction practice iii Nepalese industrial sectors. Mass participation, wide communication and effective training within the organization can only help to toe cost reduction tools in organizations. Management tools like leadership motivation etc should be used. There are several areas where cost reduction works can be exercised. Some of these areas are product design, organizations product planning and control, equipment and plant lay out, purchase and control of materials etc. for cost reduction, the modern Japanese tools, are being used which are JIT system, TQM, ABM, Benchmarking, Test Costing, Reengineering, Lifecycle Costing, Theory of Constraints, Balance Scorecard, and KAIZEN.

One of the main factors of success of Japanese manufacturing organization is application of JIT as a cost reduction tools. The JIT philosophy made famous by Toyota which has been credited With success of many of the world's leading manufactures. Bill in Nepal, none of the organizations are applying JIT as cost reduction tool. So, it is very miserable condition for Nepalese manufacturing organizations.

In 1980s. most European and American companies considered quality to be an additional cost of manufacturing, but by the end of the decade, they began to realize that quality saved money. Companies discovered that it was cheaper to produce items for the first time correctly rather their wasting responses making substandard items that have to be detected, reworked, scrapped or returned by customers.

Similarly, Activity Based Management, KAIZEN costing, Benchmarking, Target Costing, Life Cycle Costing, Reengineering. Theories of Constraints also help to reduce the cost of production. Most of the. tools are innovated by Japan. So, Japanese manufacturing organizations are getting success. It is very much necessary to apply such tools in Nepalese manufacturing organizations too.

5.2 Conclusion

After the research works made on the topic 'Application of Cost Reduction Tools in Nepalese manufacturing organizations' following conclusions have been drawn.

- In the context of Nepalese manufacturing organizations based on Kathmandu valley, most of organizations prefer to increase in volume and, reduction in operating cost for maximizing profit of the organization.
- Most of organizations prefer managing the cost scientifically for the Purpose of lowering tile operating cost and consequently the price of products.
- Nepalese manufacturing organizations are facing high cost problem in various sectors the major sectors are production planning and control, advertising and selling and distribution areas.
- JIT system is not applied by Nepalese manufacturing organizations. Its main cause is that it is identified as non availability of suppliers.
- Similarly most of the organizations are applying Target Costing as cost reduction tool.
- KAIZEN costing is not widely applied by Nepalese manufacturing organizations. The main problem for it is lack of proper information as well as lack of skilled manpower.

- Major portion of sampled organizations are applying ABM as cost reduction tool. It shows that less organization are unable to use ABM. And they are facing the problem in defining the activities.

- TOC and Balance Scorecard are new for most of organizations. They do not have proper knowledge about them. So least organizations are applying such tools.

- The ratio of applying Life Cycle Costing and Reengineering is 60:40. So, it can be said that the application of these tools are satisfactory.

- Most of the organizations follow Benchmark techniques s cost reductions tool. It can he concluded that most of the organizations want to follow what leading organizations are doing at present in overall cost reduction approach.

- In this way, it can be concluded that 53.4% organization are following cost reeducation techniques. But 46.6% organizations are not applying cost reduction tools.

- It can be said, that Nepalese manufacturing organizations arc riot applying cost reduction tools because IILIII hypothesis is riot accepted.

Finally, it can be concluded that Nepalese manufacturing organizations based on Kathmandu valley are riot applying cost reduction tools.

5.3 Recommendations

We know that, Nepal is in transitional period. It is in the process of making new constitution. Nepal is declared federal republican country. So, Nepalese manufacturing organizations are in also transitional period. They are waiting the full fledged government policy regarding manufacturing organizations. So, they are thinking of facing new situations. On the other side, Nepal is now tire member of economic groups like, WTO, SAFTA, BIMSTEC etc. Now, Nepalese manufacturing sectors have to complete with international products. Cost reduction techniques may be the best tools to overcome such situation for Nepalese manufacturing organizations. Based on the findings and conclusions of this research work, following recommendations have been forward to Nepalese manufacturing sectors and Nepalese government and future researchers for effectiveness of cost reduction tools.

5.3.1 Recommendation to Nepalese Manufacturing Organizations

Due to the lack of knowledge about cost reduction tools, Nepalese manufacturing organizations are not applying such tools property. So, they are facing high cost problem. From the findings and conclusions, it is recommended to use using cost reduction tools effectively. For this, they have to train their employees to use

such tools. They have to collect information's about success of Japanese organizations by applying cost reduction tools. JIT system has not been applied by any organizations, so it is necessary to use JIT system. Firms should manage activities with cost. Nepalese manufacturing organizations should follow KAIGEN costing as cost reduction tool.

5.3.2 Recommendation to Nepal Government

The knowledge about cost reduction in Nepalese manufacturing organizations is very low i.e. organizations have no enough knowledge about cost reduction tools. Organizations who have knowledge about facing various difficulties and complexities for cont percent application. So, government should take responsibility for it. Government should run campaign in manufacturing organizations to increase the level of application for cost reduction in every sector. For this government should play partnership role by various training and guideline to Nepalese manufacturing organizations. Government should make clear legal provisions about cost reduction problem. It is found that most of the organizations want to apply tools but they do not have any idea about this. So, government should facilitate them.

5.3.3 Recommendation for Future Researchers

- Present study can be a valuable piece of the research work in cost reductions system especially in manufacturing business sectors. It may be valuable for academicians, practicing managers and any others who are directly or indirectly involved in business, governmental and non-governmental sectors. After analysis, the researcher recommends to highlight the guidelines to put forward for better improvement.

- A detail investigation of causal linkage of cost reduction system and organizational performance can be conducted.

- The study may be conducted to investigate the reasons behind efficiency or inefficiency of cost reduction system.

- It can be increased the sample size of the firm to get more reliable result.

- Similarly, 47% manufacturing believe that management of the cost in a scientific way helps ii lowering the price of product to consumer. 33% of the organizations minimize the profit margin on sales. 20% of the organization bargain with suppliers for lowering the price of products.

- It is found that sent percent organizations think application of cost reduction tools help to reduce cost scientifically can be studied between as well as private manufacturing organizations. Cent percent manufacturing organizations are applying Total Quality Management approach as cost reduction tool. It means that all organization is conscious about quality aspect of product.

- In the context of Nepalese manufacturing organizations based on Kathmandu valley, most of organizations prefer to Decreasing in volume and reduction operating cost for minimizing profit of Maximization the organization.

- Most of organizations prefer managing the cost scientifically for the purpose of lowering the operating cost and consequently the price of products. Nepalese manufacturing organizations are facing high cost problem in various sectors the major sectors are production planning and control, advertising and selling and distribution areas. The management are recommended to apply the supervision system in order to implement the currently used tools and techniques properly. Similarly, they are suggested to establish an information system to use the new tools and techniques in order to reduce cost to the minimum level.

- Involvement of top management is higher in order to implement the target costing system in Nepalese manufacturing companies

BIBLIOGRAPHY

Books:

Agrawal, Govind Ram (2003), ***Dynamics and Business Environment of Nepal.*** Kathmandu: M.K. Publishers and Distributors.

Anthony, R.N. and Welsh, G.A. *(1977),* ***Fundamentals of Management Accounting,*** Illinois: Richard Irwin Homewood.

Bajracharya and Ojha (2008), ***Management Accounting,*** Kathmandu: Benchmark Education Support.

Batty, :I. (1982), ***Management Accounting,*** Plymouth: The English Learning Book Society and N1C: Donald and Evans Ltd,

Bhattachary, Asish K. (1992), ***Principle and Practice of Cost Accounting,*** Allahabad: Wheeler Publications.

Blocher, Edward J. Chen. Kung, LIn, Thomas W. (1999). ***Cost Management,*** a strategic emphasis, London: McGraw-Hill Publishing.

Buffa, Elwod S. and Sarin, Rakesh K. (2000), ***Modern Production/Operation Management,*** New York: John Wiloy & Sons.

Chadwick, Lesli (1996), ***The Essence*** *of* ***Management Accounting,*** *New* Delhi: Prentice Hall of India Pvt. Ltd.

Chase, Richard B. Nicholas J. Aquilano & F. Robert (1999), ***Management Accounting,*** New Delhi: McGraw Hill Publishing Company Ltd.

Dangol, R.M. (2064). ***Cost & Management Accounting,*** Kathmandu : Taleju Prakashan.

Dangol, R.M. and Dangol, Jitendra (2064), ***Management Accounting,*** Kathmandu: Taleju Prakashan.

Decoster, D.T. (1979), ***Management Accounting: A*** Decision Emphasis, New York: John Wiley and Sons.

Dessler, Garry (2003), ***Human Resources Management,*** Delhi: Pearson Education India**.**

Dilworth, James B. (1993), ***Production & Operation Management,*** , New: McGraw Ice.

Drury, Colin {2004), ***Management and Cost Accounting,*** 6th ed, Australia: Thomson Learning.

Drury, Colin (2004), ***Management and Cost Accounting,*** United State: Business Press Thomson Learning.

Garrison, R.H. (1985). ***Managerial Accounting,*** Texas: Business Publication Inc.

Goyal, Dr. S.N. and Dr. Manmohan (1997). ***Principles of Management Accounting,*** Agra: Sahitya Bhawan Publication.

Hilton, Ronald W. (2002). ***Management Accounting.*** New York: The McGraw Hill Co. Inc.

Horngree, C.T. (1978), ***Introduction to Management Accounting,*** New Jersey: Prentice Hall.

Hongreen, C. T. Sundeen, **Gary h.** & **Stration W.D.** (2001), ***Introduction to Management Accounting***, New Delhi: Percentile Hall of India.

Jain, S.P. & Narang, K.L. (1999). ***Cost Accounting Principles and Practice,*** New Delhi: Kalyam Publishers.

Jain, S.P. & Narang, K.L. (2000), ***Cost Accounting Principles and Practice,*** New Delhi: Kalyani Publishers.

Kaplan, Robert S. & Atkinson, Anthony (2004), ***Advanced Management Accounting,*** New York: Percentile Hill International.

Khan, M.Y. & Jain, P.K. (1997), ***Management Accounting,*** New Delhi: 'I'ata McGraw Hill Publishing Co. Ltd.

Lal, Jawahar (1985), ***Cost Accounting,*** New Delhi: Tata McGraw-Hill Publishing.

Lal, Jawahar (1996), ***Managerial Accounting,*** Delhi: Himalaya Publishing House.

Nigam, B.M. Lall and Sharma (1999), ***Advanced Cost Accounting,*** Bombay: Himalayan Publishing House.

Swaminathan (1978), ***Lectures on Costing,*** New Delhi: S. Chand & Co. Ltd.

Wolff. Howard K. & Pant Prem Raj (2005), ***Social Science Research & : Thesis Writing,*** Kathmandu: Buddha Academic Publishers and Distributors Pvt. Ltd.

Previous Research Works:

Dahal (2005), ***A Study on Applying Cost Reduction Tools to Strengthen Manufacturing enterprises of Nepal***, Unpublished Dissertation.

Paudel (2007). ***Cost Reduction Tools, Application in Nepalese Manufacturing Enterprises,*** Kathmandu: Unpublished Dissertation.

Karki (2008), ***Practice of Cost Reduction Tools and Techniques in Selected Nepalese Manufacturing Company,*** Kathmandu: Unpublished Dissertation.

Appendix I

Research Questionnaires

[Please make a tick mark on the following options and express your opinion towards your choice wherever necessary]

Q.No.1 Which of the following options does your organization give priority for the profit cum wealth maximization?

a. Increase iii volume of sales ( )

b.. Increase in selling price ( )

c. Reduce in cost ( )

Q.No.2 Do you know that t11e use of some tools can help to reduce cost?

a. Yes

b. No

Q.No.3 To reduce the cost of purchase to the customers, which of the following methods is your organization using at present?

a. Bargaining with the suppliers of materials. ( )

b. Managing the cost in a scientific way. ( )

c. Minimizing its margin on sales. ( )

Q.No. 4 In which of the following area is your organization suffering from cost problem and requires cost reduction program?

a. Product Design ( )

b. Organization work system ( )

c. Production planning and control ( )

d. Equipment and plant lay out (}

e. Administrative ( )

f. Selling arid distribution ( )

g. Finance ( )

h. Purchase of materials and control ( )

Q.No. 5 Do top managerial level ɹur organization know about cost reduction tools existing in management system?

a. Yes ( ) b. No ( )

Q.No.6 Does your organization use JIT approach to reduce inventory cost?

a. Yes ( ) b. No ( )

Q.No.7 If J1T system has not been used in organization, what are the causes for it?

a. Lack of skilled and experienced man-power ( )

b. Non-availability of suppliers ( )

c. Lack of information ( )

d. Other, if any, please specify.....

Q.No. 8 Does your organization use Total Quality Management (TQM) approach?

a. Yes {) b. No ( )

Q.No.9 If TQM has not been applied in organization, what are the causes for it?

a. Lack of skilled manpower ( )

b. Quality is not tile problem ( )

c. Lack of team spirit in the employees ( )

d. Other, if atty. please specify.....

Q.No.10 Does your organization apply target costing tool for cost reduction?

a. Yes ( ) b. No ( )

Q.No.11. If Target Costing has not been applied, what might be the reason for the failure for applying it?

a. Lack of skilled manpower ( )

b. Lack of information ( )

c. Lack of top management support ( )

d. Other, if any, please specify .....

Q.No.12 Does your organization follow Benchmarking?

a. Yes ( ) b. No ( )

Q.No.13 If Benchmarking has not been applied, what might be reasons for it?

a. Lack of perfect knowledge ( )

b. Lack of top management support ( )

c. Lack of information ( )

d. Other, if any, please specify.....

Q.No.14 Do" your organization apply KAIZEN costing system?

a. Yes ( ) b. No ( )

QNo.I5. If KAIZEN has not been applied, what might be reason for it ?

a. Lack of KAIZEN efforts of the employees ( )

b. Lack of qualified manpower ( )

c. Other, if any please specify .....

Q.No. 16. Does your organization apply Activity Based Management (ABM) ?

a. Yes ( ) b. No ( )

Q.No. 17 If ABM has not been applied, what might be the reason for it?

a. Problems in defining activity ( )

b. Lack of top management support ( )

c. Lack of proper information ( )

d. Other, if any, please specify.....

Q.No. 18 Does your organization apply Reengineering as cost reduction tool?

a. Yes ( ) h. No ( )

O.No.19 If Reengineering has not been applied what might be reason for it?

a. Lack of top management support ( )

b. Lack of readiness for change ( )

c. Lack of proper market information ( )

d. Other, if any. please specify .....

Q.No.20. Does your organization applies Theory of Constraints (TOC) as cost management tool ?

a. Yes ( ) b. No ( )

Q.No.21 It has not been applied, what might be the reason for it'?

a. Lack of knowledge about TOC ( )

b. Lack of top management support ( )

c. Not applied by the organizations ( )

d. Other, if any, please specify.....

Q.No. 22. Does your organization apply Life Cycle Costing ?

a. Yes ( ) b. No ( )

Q.No. 23. If Life Cycle Costing h t been applied in your organization what might be the reason for it ?

a. Lack of proper information ( )

b. Lack of top management support ( )

c. Your organization think that it does not help in reducing cost. ( )

d. Other, if any. please specify .....

Q.No. 24. Does your organization use Balance Scorecard ?

a. Yes ( ) b. No ( )

Q.No. 25. If balance Scorecard has been not applied in your organization, what might be the reason for it ?

a. Lack of proper knowledge ( )

b. Lack of top management support ( )

c. It requires skilled manpower ( )

d. Other, if any. please specify .....

Q.No. 26. Do you really think that cost reduction tools are effective in reducing cost ?

a. Yes ( ) b. No ( )

Name of Respondent: .....

Position: .....

Age: .....

Gender: .....

Again thank you for your valuable information and kind co-operation.

APPENDIX

1. Computation of weight

i. LCM comes to 30 from 2,3,5,3,2

ii. Weight of each sub-sector

iii. Value of each sub-sector = $\frac{LCM}{\text{Respective No.}}$ x No. of sample applying cost reduction tools.

2. Data have been restructured as follows.

particulars	Food and Beverage (A)	Irons and Steels (B)	Plastics and Foam (C)	Liquors (D)	Shoes (E)	X_{2A}	X_{2B}	X_{2C}	X^2_D	X_{2E}	$\sum_P E$	$\sum E^2_P$
JIT	15x0=0	10x0=0	6x0=0	10x0=0	15x0=0	0	0	0	0	0	0	0
TQM	15x2=30	10x3=30	6x5=30	10x3=30	15x2=30	900	900	900	900	900	150	4500
TC	15x2=30	10x2=20	6x3=18	10x3=30	15x0=0	900	400	324	900	0	98	2524
Kaizen	15x1=15	10x1=10	6x1=6	10x1=10	15x0=0	225	100	36	100	0	41	461
ABM	15x2=30	10x3=30	6x4=24	10x2=20	15x2=30	900	900	576	400	900	134	3676
Reengineering	15x2=30	10x2=20	6x2=12	10x3=30	15x0=0	900	400	144	900	0	92	2344
TOC	15x2=30	10x3=30	6x0=0	10x0=0	15x0=0	900	900	0	0	0	60	1800
Life Cycle	15x1=15	10x1=10	6x3=18	10x2=20	15x2=30	225	100	324	400	900	93	1949
S	15x1=15	10x1=10	6x0=0	10x0=0	15x0=0	225	100	0	0	0	25	325
Benchmarking	15x2=30	10x3=30	6x5=30	10x3=30	15x0=0	900	900	900	900	0	120	3600
$\sum_X E$	225	190	138	170	90	6075	4700	3204	4500	2700	T=813	$\sum E^2_P$ 97112 $=X_P$

3. The computation of Correction factor,

Total sum of squares (TSS), sum of squares due to sector (SSC) and sum of squares due to types of tools (SSR) have been calculated below:

i. Correction Factor (C.F.)

$$\therefore \text{C.F.} = 13219.38 = \frac{(813)^2}{7\times10}$$

ii. Total sum of Squares (TSS) = $\sum X_{2}rc - \text{C.F.}$

$$= 21179 - 13219.38$$

$$= 7959.62$$

iii. Sum of Squares between columns/sub-sector

(SSC) =

$$= \frac{\sum(xc)^2}{cr} - C.F.$$

$$= \frac{(225)^2}{10} + \frac{(190)^2}{10} + \frac{(138)^2}{10} + \frac{(170)^2}{10} + \frac{(90)^2}{10} - 13219.38$$

$$= 14276.9 - 13219.38$$

$$\therefore \text{SSC} = 1057.52$$

iv. Sum of squares between rows/types of tools

(SSR) =

=

= 17495.8 – 13219.38

∴ SSR = 4276.42

v. Sum of squares as the residuals/errors

SSE = TSS – SSC – SSR

$$\frac{\sum (x_{\cdot j})^2}{nc} - C.F.$$

$$= 7959.62 - 1057.52 - 4276.42$$

$$\therefore SSE = 2625.68$$

$$\frac{(0)^2}{5} + \frac{(160)^2}{5} + \frac{(98)^2}{5} + \frac{(41)^2}{5} + \frac{(134)^2}{5} + \frac{(91)^2}{5} + \frac{(60)^2}{5} + \frac{(95)^2}{5} + \frac{(25)^2}{5} + \frac{(120)^2}{5} - 13219.38$$