Practices of Capital Budgeting Techniques in Manufacturing Enterprises in Kathmandu

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ABSTRACT

The research has been carried out on capital budgeting practices in Manufacturing Enterprises, Kathmandu district with the aim to analyze and evaluate the capital budgeting practices applied by manufacturing firms in Kathmandu district. To accomplish the objective, descriptive research is the process of accumulating facts. The research is to be based on the information of the sample companies through structured questionnaires. For the data analysis and interpretation, percentage was used according to the nature of the data.

The application of CB techniques is useful only for large types of organization. Small types of organizations do not want to evaluate project by using CB techniques. Most manufacturing enterprises get advantages after implementation of the CB evaluation techniques. Organizational objectives can be achieved through effective management and use of CB techniques. Most of the sample companies in Kathmandu district are not foregone profitable investment opportunities in view of some limit imposed on the size of capital budget.

Key words: Capital Budgeting, Project, NPV, IRR, PBP, ARR

Introduction

Since assets are the source of revenue generation for the firm, it appears logical that future sales growth is heavily correlated with the expansion of capital expenditure. With increased sales from closely scrutinized capital expenditure selections, the long-range impact on the firm's earnings and dividends theoretically should be referred by a strong performance in the market value of the firm's equity share price. It should be noted, however, that capital budgeting is indeed a specialized process, which very frequently requires highly sophisticated techniques and rather indicates forecasting for future years. Inaccuracy in the selection of such projects will ultimately decrease the profit, dividends and share price value of the firm. Comprehensive profit planning includes the underlying activities or tasks that must generally be carried out to attain maximum usefulness. The mechanics of profit planning and control are activities as the design of budget schedules, routine and repetitive computations and clerical activities relate to a profit planning and control programme (Pandey, 1998).

A capital budgeting decision is a two-sided process. First, the analyst must evaluate a proposed project to forecast the likely or expected return from the project. It means firstly calculate the internal rate of return of the project. This calculation generally begins with an expenditure of cash at the beginning of the project's service life and a stream of cash flowing to the firm over the life of the project. The second side of a capital budgeting decision is to determine the required rate of return from a project. After determining the required rate of return of the project, then evaluation can be made (Garrison & Noreen, 2017).

In this way, capital budgeting is the process of evaluating the project to invest in long-term by using different evaluation methods and tools and taking a correct decision regarding long-term assets. Therefore, capital budgeting is the most important evaluation tool of investment in fixed assets.

The spending of funds for fixed assets represents an implied forecast of future sales. If machinery or a building is not purchased, the firm may not be able to meet the demand in the future. If too much is purchased, the firm is stuck with unneeded capacity. An important part of the capital budgeting process is forecasting sales, possibly ten or fifteen years into the future. Capital expenditure decisions are quite often irreversible, because there is little or no second hand market for many types of capital goods. The only alternative is continuous use of the asset to its scrap value. Thus, the decision is irreversible. Because of these two features, capital expenditures effectively commit the firm to a given technology, and significantly determine the future pattern of operating expenditure (Hilton, 2015).

Objective of the Research

The basic objective of the research is to analyze and evaluate the capital budgeting practices applied by manufacturing firms in Kathmandu district.

Conceptual Framework

The term 'investment' usually refers to the commitment of resources made with the expectation of realizing future benefits over a reasonable time period. In other words, capital expenditure which is also known as fixed investment is the investment in tangible assets with terminable life utilized in production and or distribution of product or service. Fixed investment includes a long time period and huge amount of money/ fund required to invest. An efficient allocation of capital is the most important finance function in modern times. It involves decisions to commit the firm's funds to long-term assets. Such decisions are of considerable importance to the firm since they tend to determine its value by influencing its growth, profitability and risk (Pandey, 1998).

Capital budgeting is the process of planning and controlling the strategic (long term) and tactical (short term) expenditures for expansion and contraction of investments in operating fixed assets (Welsch et al., 2006).

Capital Budgeting Decision

The decision regarding capital expenditures have far-reaching effects on the success or failure of an enterprise. If capital assets are acquired once, it cannot be disposed of except at a substantial loss. On the other hand, if capital assets are acquired on a long term credit basis, a continuing liability is incurred over a long period of time. By that means, capital budgeting decisions are important (Koirala et al., 2017).

Capital budgeting decision indicates the process of selecting and allocating funds for tangible fixed assets with terminable life. This can also be viewed as deciding such fixed investment projects, which involves the outlay of cash in return for anticipated flow of future benefits. The capital budgeting decision process involves the planning and management of business investment in fixed assets. This process begins with the search for new and more profitable investment opportunities. It continues through months of preparing engineering, market and economic analysis designed to forecast operational impacts and evaluate the profitability of each investment proposal. And finally concludes with the preparation, approval and implementation of the firm's capital budget.

Importance of Investment Decision

Investment decision is the most crucial decision among other types of organizational decision. The importance of capital budgeting is increasing due to the following reasons (Paudel, 2016):

- They influence the firm's growth in the long run.
- They affect the risk of the firm.
- They involve commitment of a large amount of funds.
- They are irreversible or reversible at substantial loss.
- They are among the most difficult decisions to make.

Growth: The effects of investment decisions extend into the future and have to be endured for a longer period than the consequences of the current operating expenditure. A firm's decision to invest in long term assets has a decisive influence on the rate and direction of its growth. A wrong decision can prove disastrous for the continued survival of the firm; unwanted or unprofitable expansion of assets will result in heavy operating costs to the firm. On the other hand, inadequate investment in assets would make it difficult for the firm to complete successfully and maintain its market share.

Risk: A long-term commitment of funds may also change the risk complexity of the firm. If the adoption of an investment increases average gain but causes frequent fluctuations in its earnings, the firm will become more risky. Thus, investment decisions shape the basic character of a firm.

Funding: Investment decisions generally involve large amounts of funds which make it imperative for the firm to plan its investment programmes very carefully and make an advance arrangement for procuring finances internally or externally.

Principles of Capital Budgeting

Capital expenditure decisions should be taken on the basis of the following factors:

- Creative search for profitable opportunities: The first stage is the conception of the profit making idea. Profitable investment opportunities should be sought to supplement existing proposals.
- Long-Range Capital Planning: A flexible programme of a company's expected future development over a long period of time should be prepared.
- Short-Range Capital Planning: This is for a short period. It indicates its sectoral demand for funds to stimulate alternative proposals before the aggregate demand for funds is finalized.
- Measurement of Project Work: The economic worth of a project to a company is evaluated at this stage. The project is ranked with other projects.
- Screening and Selection: The project is examined on the basis of selection criteria, such as the supply and cost of capital, expected returns, alternative investment opportunities etc.
- Control of Authorized Outlays: Outlay should be controlled in order to avoid costly delays and cost over runs.
- Post Mortem: The ex-post routines of a completed investment project should be re-evaluated in order to verify their exact conformity with exante projections.
- Retirement and Disposal: The expiry of the cycle in the life of a project is marked at this stage.
- Forms and Procedures: These involve the preparation of reports necessary for any capital expenditure programme.
- Economics of Capital Budgeting: It includes estimating the rate of return on capital expenditures. Knowledge of economic theory underlying investment decisions is needed for this purpose. This broad field of decision making for capital investment is one of the most difficult, one of the most recurrent and one of the most controversial of management areas; and it is also an area where there are tremendous opportunities for basic improvements in operations and policies. It may be emphasized here that the use of a model or of any of the mathematical techniques of the operations researcher does not imply management by computers. The mathematical model itself is a tool of management rather than a replacement for management
- Authorization: Since capital expenditure budget does not contain detailed expenditure, it is essential that before any individual projects relating to capital items are started, the expenditure should be specially authorized (Kulkarni, 1992).

Methods and Procedures

Research methodology is that procedure of planned outline which deals with the research design, data collection procedure, nature and sources of data, data selecting styles, presentation style of collected information and interpreting it.

Research Design

Research design is that outline which configures the collection and analysis style of the data and information. As the topic of this research is capital budgeting practice in Kathmandu district, it mostly tries to flash the present status of capital budgeting practice in such a region. To accomplish the objective, descriptive research is the process of accumulating facts.

Nature and Sources of Data

The research is to be based on the information of the sample companies through structured questionnaire and some relevant books, journals, reports, electronic media such as websites etc. It means the analysis is done on the basis of primary information. The primary information is gained through the sample respondent companies. Only 25 manufacturing companies are chosen using the convenience sampling method.

Methods of Data Analysis

For the analysis of the collected data and information, analysis has been done as the nature of data is available. First of all the collected data and information has been grouped and rearranged so as to make comparison easy. A variety of methodology is applied according to the reliability and consistencies of data, then the grouped and rearranged data is tabulated, presented, analyzed, and interpreted systematically as it is needed. For the data analysis and interpretation, percentage was used according to the nature of the data.

Results and Analysis

This chapter is the main part of the research which deals with presentation and analysis of data and information in systematic order collected from opinion survey.

Knowledge of Time Value of Money

To know the respondent companies are familiar with the concept of time value of money concept, researcher had asked 'what is your opinion that the entrepreneurs have to gain the knowledge of time value of money concept?' The result has been presented in the following table:

Table 1: Knowledge of Time Value of Money

S. No	Clarity Options	No. of Respondents	Percent
1	Must necessary	14	56
2	Moderately necessary	8	32
3	General knowledge is required	3	12
4	Not necessary	0	0

Source: Opinion survey, 2020.

It is observed that 56 percent of the respondents have focused on the time value of money concept that it is necessary for entrepreneurs to gain the knowledge of time value of money concept. On the other hand, all respondents agreed that entrepreneurs have to gain the knowledge of time value of money concept as they have asked whether necessary, moderately necessary or general knowledge is required. No one respondent has asked that the entrepreneurs have to gain the knowledge of time value of money concept 'Not necessary'. It also shows that all respondents are familiar with the concept of time value of money. Thus, it is concluded that all entrepreneurs have to gain the knowledge of time value of money concept and all companies have clarity about the concept of time value of money.

Knowledge of CB

To know about the concept of CB that the respondents have got any idea about it, they were asked 'Have you got any idea about capital budgeting from any where?' The result has been presented in the following table:

Table 2: Knowledge of CB

S. No.	Options	No. of respondents	Response in Percent
1	Yes	25	100
2	No	0	0

Source: Opinion survey, 2020.

The researcher observed that 100 percent of respondents have knowledge of CB technique. It shows that the organizations are aware of HR recruitment at present. They recruit competent manpower for their organization. The researcher found every employee knows about CB.

Source of Knowledge of CB

The main source of gathering knowledge of CB is the academic study of the respondents. The responses are presented in the following table:

Table 3: Source of Knowledge of CB

S.No.	Options	No. of respondents	Response in Percent
1	From training given by organization	4	16
2	From academic study	21	84
3	From newspaper, journals and others	0	0
4	Any others (Please specify)	0	0

Source: Opinion survey, 2020.

After visiting the selected manufacturing enterprises of Kathmandu district, it is concluded that 84 percent of the respondent companies have a source of knowledge

of CB from academic study. It is observed that 16 percent of the respondents have knowledge of CB from their academic study. Thus, it can be clearly identified that almost all managers have completed their bachelor's degree in management.

Knowledge of CB Techniques

To know if the decision makers have knowledge of CB techniques, the researcher had asked, 'Do the decision makers have to know about CB techniques?' The responses obtained from respondents have been presented in the following table:

Table 4: Knowledge of CB Techniques

S.No.	Options	No. of Respondents	Response in Percent
1	Simple knowledge is required	9	36
2	Good knowledge is required	10	40
3	Very good knowledge is required	6	24
4	Not necessary	0	0

Source: Opinion survey, 2020.

It is observed that 40 percent of the respondents have noted that a very good knowledge about capital budgeting techniques is required by the decision makers. It also shows that the majority respondents have a sound knowledge of CB techniques clearly. Respondents who do not reply that the decision makers do not have to know about the CB techniques also show that they have very good knowledge of CB.

Use of CB Methods

The researcher had asked the question, 'How frequently do you use the CB methods?' In this question, various respondents have given various responses that are figured in table below:

Table 5: Use of CB Methods

S. No.	Options	No. of Respondents	Percent
1	Always	10	40
2	Often	5	20
3	Sometimes	8	32
4	Rarely	2	8

Source: Opinion survey, 2020.

The researcher observed that 40 percent of the total respondents use CB methods frequently to analyze the feasibility study of the projects. Other results are, 32 percent use CB methods sometimes, 20 percent use it often, 8 percent use rarely. Hence, it can be concluded that all the respondents were found using capital budgeting techniques while making investment decisions.

Preference of Cash Flow Calculation Method

The researcher had asked the question, 'which types of cash flow calculation method do you like most?' In this question, three options are provided to the respondents. The result has been presented in the following table.

Table 6: Preference of Cash Flow Calculation Method

S. No.	Options	No. of Respondents	Percent
1	Increment of cash inflow (expected income)	9	36
2	Reduction of cash outflow (operating cost)	8	32
3	Sometimes option 'a' sometimes 'b'	8	32

Source: Opinion survey, 2020.

The researcher observed that 36 percent respondents use incremental cash inflow method for calculation of cash flow, 32 percent use operating cost or reduction of cash outflow method and same percent use sometimes incremental cash inflow method and sometimes operating cost method. The respondents who prefer reduction of cash outflow said that using cost reduction of cash outflow said that using cost reduction tools empower the strength of the organization and if cost is reduced then one also can reduce the sales price and ultimately sales will rise up. Therefore, reduction of operating cost is the best tool to generate income.

Basis of Cash Flow Calculation

To evaluate the basis of cash flow calculation followed by respondents, the researcher provides various options.

Table 7: Basis of Cash Flow Calculation

S.No.	Options	No. of Respondents	Percent
1	Studying past result	8	32
2	Considering the expected future environment	11	44
3	Observing the practices of competitor	6	24

Source: Opinion survey, 2020.

The researcher observed that 44 percent respondents calculate cash flow considering the expected future environment, 32 percent respondents calculate cash flow by studying the company's past trend and 24 percent respondents calculate cash flow by observing the practices of competitors. The results show the cash flow should be calculated by considering the expected future environment.

Effectiveness of Cash Flow Forecasting

To examine the effectiveness of cash flow forecasting, the researcher had asked the question, 'Has your expectation of cash flow matched with actual data?' In this question,

three options are provided to the respondents. Majority of the respondents asked nearly matched. The result has been presented in the following table:

Table 8: Effectiveness of Cash Flow Forecasting

S. No.	Options	No. of Respondents	Percent
1	Highly matched	9	36
2	Nearly matched	12	48
3	Not matched	4	16

Source: Opinion survey, 2020.

The researcher observed that 48 percent responded it is nearly matched with actual data, 36 percent responded it is highly matched but 16 percent asked it is not matched with actual data. From this, the researcher concluded that future forecasting of cash flow generally matched with actual.

Practices of CB Techniques in Manufacturing Enterprises

The researcher had asked the question, 'What methods/ techniques of CB the company is familiar with?' In this question techniques of CB are provided in options. The result has been presented in the following table:

Table 9: Practices of CB Techniques

S. No.	Options	No. of Respondents	Percent
1	PBP	2	8
2	ARR	1	4
3	NPV	8	32
4	IRR	3	12
5	PI	1	4
6	All of above	10	40

Source: Opinion survey, 2020.

The researcher observed that 40 percent of respondents use all capital budgeting evaluation techniques. It means they use suitable tools considering other factors like time, resources, investment types, investment range, decisions etc. They sometimes use NPV, IRR or ARR to make investment decisions. Other results are observed as 32 percent use NPV, 12 percent use IRR, 8 percent use PBP and 4 percent use both ARR and PI. So, the researcher concluded that NPV is the most suitable method to evaluate the investment decision because it is the discounted technique and it can give the better result for decision making. In this way, the researcher found that all techniques are used by the manufacturing enterprises as per requirement and suitability.

Vary in Using CB Techniques with Different Investment Limit

Respondent companies were asked to indicate the CB evaluation techniques vary or not according to the different limits of investment, the results have been presented in the following table:

Table 10: Vary in Using CB Techniques with Different Investment Limit

S. No.	Options	No. of Respondents	Percent
1	Yes	18	72
2	No	7	28

Source: Opinion survey, 2020.

It is observed that 72 percent of the respondent companies are in favour of CB evaluation techniques that vary according to the investment limit of the project. It means if the investment is small, one CB technique is suitable, in a medium level investment one CB technique is suitable and so on. Thus, it can be concluded that the use of CB evaluation techniques vary with different range of investment. Only one CB evaluation technique is not suitable for all of the investment.

Use of CB Evaluation Techniques with Different Investment Range

By focusing on those respondent companies who reply the CB evaluation techniques vary with different investment ranges, they were asked, and 'which of the following CB evaluation techniques do you apply if your investment range is in the following?' The responses were as follows:

It is concluded that CB evaluation techniques do not vary with investment range because the majority of the respondents use NPV techniques before investing the project. From the practice of respondent companies and by the priority, new sequential order obtained is as follows:

Table 11: Sequential Order with Investment Range

S. No	Investment Range	Evaluation Tools Preference			
		1st	2nd	3rd	4th
1	Up to Rs 1000000	NPV	PBP	IRR	ARR
2	Rs 1000000 to Rs 5000000	NPV	IRR	PBP	ARR
3	Rs 5000000 & above	NPV	IRR	PBP	-

Source: Opinion survey, 2020.

Application of CB Techniques

The application of CB is the most important part for the organization. To examine the degree of CB techniques applied by organization, a question was asked, 'What is your opinion regarding the application of CB techniques in your organization?' The responses were as follows:

Table 12: Application of CB Techniques

S. No.	Options	No. of Respondents	Percent
1	Highly satisfactory	11	44
2	Satisfactory	8	32
3	Average	4	16
4	Dissatisfactory	2	8
5	Highly dissatisfactory	0	0

Source: Opinion survey, 2020.

About 44 percent of the respondents reply highly satisfactorily about the application of CB techniques in their organization, 32 percent reply satisfactory result and 16 percent reply average. Only 8 percent of the respondent companies replied that the application of CB techniques is not at the point of satisfaction. In conclusion, the application of CB techniques is useful only for large types of organizations and small types of organizations do not want to evaluate project by using CB techniques.

Implementation of CB

To know whether the organizations get an advantage after implementing the CB evaluation techniques or not, a question was asked 'is it advantageous after implementing the CB evaluation techniques in your organization?' the results were:

Table 13: Implementation of CB

S. No.	Options	No. of Respondents	Percent
1	Highly advantageous	7	28
2	Advantageous	15	60
3	Not advantageous	2	8
4	No change	1	4

Source: Opinion survey, 2020.

About 60 percent of the respondent companies have got advantages of implementing CB techniques. Out of 25 respondents, 7 had replied that it is highly advantageous. Only 2 i.e. 8 percent of the respondent companies replied not advantageous after implementing CB techniques. Those who replied that after implementing CB techniques, there is no change and it is not advantageous, such organizations had very small volume of sales and they could not spend lots of money to implement the CB evaluation techniques. Thus, it is concluded that most of the manufacturing enterprises get advantages after implementing the CB evaluation techniques.

Effectiveness of CB Techniques

To know the effectiveness of CB evaluation techniques, the respondent companies were asked, 'Is there any difference in your organization before and after implementing the CB techniques?' The responses are presented in the following table:

Table 14: Effectiveness of CB Techniques

S. No.	Options	No. of Respondents	Percent
1	Yes	19	76
2	No	6	24

Source: Opinion survey, 2020.

It is observed that 76 percent respondent companies realized that there is a difference in organization before and after implementing the CB techniques. Only 24 percent respondent companies replied that there is no difference before and after implementation of CB techniques. Therefore, it did not realize any difference before and after implementing the CB techniques.

Attainment of Organizational Objectives

A question was asked, 'Have the CB techniques helped to attain organizational objectives?' The responses were as follows:

Table 15: Attainment of Organizational Objectives

S. No.	Options	No. of Respondents	Percent
1	Yes	10	40
2	No	6	24
3	It has helped a little	9	36

Source: Opinion survey, 2020.

About 40 percent of the respondent companies are satisfied in using CB techniques because it has helped to attain the organizational objectives. Most of the companies have an objective of maximizing the wealth of the firm. By using CB techniques at the time of investment, many factors have been analyzed. This analysis is very useful for the attainment of organizational objectives. The respondents, who say CB techniques have not helped to attain the organizational objectives, asked that they would not be able to implement the CB techniques properly due to the time factor, cost and management efficiency. Thus, it is concluded that organizational objectives can be achieved through effective management and use of CB techniques.

Conclusion

Generally, the investment range is not different from the use of CB methods. It means whether the investment amount is greater or small, CB analysis is required. Preference

of cash flow calculation method is different in manufacturing organizations. Both incremental cash inflow and reduction of cash outflow methods are used by manufacturing enterprises. For calculation of cash flow by manufacturing enterprises, they mostly consider the expected future environment. Therefore, it is concluded that cash flow is calculated by considering the expected future environment. But some enterprises calculate cash flow by studying past results and observing the practices of competitors.

From practice and responses given by the manufacturing enterprises, it is concluded that if they do not consider the expected future environment and use past trends of the company or competitor's practice, the forecasting of cash flow would not be matched. The applicants of capital budgeting technique while making the capital expenditure decision preferred the evaluation techniques in this order NPV, IRR, PBP, ARR & PI. The use of CB techniques is mainly based on the time, available resources, investment types, investment range etc. The use of CB evaluation techniques vary with different limits of investment. Only one CB evaluation technique is not suitable for all of the investment/ investment range. Thus, it is concluded that CB evaluation techniques do not vary with investment range. The application of CB techniques is useful only for large types of organizations and small types of organizations do not want to evaluate project by using CB techniques. Most manufacturing enterprises get advantages after implementation of the CB evaluation techniques. Organizational objectives can be achieved through effective management and use of CB techniques. Most of the sample companies in Kathmandu district are not foregone profitable investment opportunities in view of some limit imposed on the size of capital budget.

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