

RELEVANT COST CONCEPT: A Glaring Dichotomy-Accountant's Perspective**Dr. Omah Ishmael***B.Sc, M.Sc, M. Phil & PhD.**Department of Accounting and Finance**Faculty of Management Sciences**Lagos State University**Phone:07039656084*omahishmael@yahoo.com**Osamor . I .P***B.Sc, M.Sc, ACA,)**Department of Accounting and Finance,**Faculty of Management Sciences**Lagos State University*ifyosamor@yahoo.com**ABSTRACT**

Purpose: *This paper examines the concept of relevant cost, its relevance in decision making analysis, its decision advantage in both short and long-term planning decisions and how it influences the decision maker's choice of preference/priorities. The study is based on primary information (data) tailored to allow individual respondents comprehend the concept of "relevant cost". Forty (40) closely related questionnaires were prepared and administered in some business retail traders in "ALABA INTERNATIONAL MARKET". A review of related literature was also applied to have a general over-view of the concept of relevant cost ideology. It was revealed that relevant cost or costs are costs appropriate to a specific management decision. They are estimated future costs, that are different under alternative courses of action for a specific problem. It consist of both fixed and variable costs. Relevance in decision making is independent of cost behavior pattern. It influences the decision maker's choice of preference and priority. If a decision is to be taken to either add a product or drop a product, salary of a supervisor or managing director is irrelevant. It is a differential (or incremental) cash flow that forms a component of relevant cost.*

Keywords: *Relevant, cost, differential, incremental, irrelevant, highlight, limiting factor, preference, appropriate, cost indifferent point (CIP).*

Introduction: Decision making involves prediction, which cannot change the past, but expected to influence the future. Decision making involves two types of decisions – long term and short term operating decisions. The long-term decisions force the management to look beyond the current year, time value of money and return on investment are the considerations. Short-term operating decisions involve the selection of alternatives that can be implemented within a given financial period under consideration. These short-term operating decisions involve many special non-recurring decisions. Decision-making involves choice between alternatives. Many quantitative and qualitative factors have to be taken into consideration.

The term "COST" is very elusive. It has different meanings in different situations. A cost accountant examines each situation in depth to decide the type of cost concepts to be used and it plays an important role in decision-making by making precise and relevant data available to management. In cost studies, a cost accountant should always consider four points for decision-making process.

- Establish why a choice is necessary.
- Separately analyze each available alternative.
- Determine how every alternative alters or influences decision maker's choice of preference.
- Choose a course of action from among the alternatives.

Literature Review: A variety of terms are used to characterize the cost concepts used for decision making. The major cost concepts/ terms which are commonly used for decision-making are:

Relevant Cost Analysis: It is the process of analyzing and selecting a course of action from a number of alternatives. Under this analysis, basic emphasis remains on identification of relevant costs, revenues and resources that differ between the alternative courses of action.

Relevant Costs: Relevant costs are costs appropriate to a specific management decision (Saxena V.K & Vashist CD- 1989). These are future costs that are different under alternative courses of action for a specific problem. A cost item is relevant to the decision, if it influences decision maker’s choice (Gupta RK. 1987). For example, salary of managing director in an organization may be N5 million per annum. This may be a correct information, but it has no bearing on whether a particular product should be added or dropped. Therefore, if a decision is to be taken to either add or drop a product, salary of managing director is irrelevant. In other words, only differential (or incremental) cash flows should form part of relevant cost and cash flows which are recurring to all alternatives are irrelevant. Imputed costs do not form part of relevant cost. All costs accumulated for the stock valuation purposes may not be relevant cost.

Decision Driven Costs: These are costs incurred following policy decision which is continued to be incurred unless the decisions are altered. They do not vary with the changes in output or change in operational activities.

Differential Cost: The difference in total costs between any two acceptable alternatives. The key emphasis in differential cost is on change in total costs associated with alternative decision. Incremental cost is the increase in cost from one alternative to another. Decremental cost is the decrease in cost due to alternative under consideration. Differential cost is a term broader than incremental or decremental cost. It encompasses both the terms. Differential cost represents the difference in total cost of the alternatives. This total cost of alternative may include costs which are common, therefore, irrelevant for decision. Relevant cost does not include irrelevant cost. Costs common under the alternative are ignored in relevant cost analysis because clarify is enhanced by confining the reports to the relevant items.

This can be explained by presenting statement both differential cost approach and relevant cost approach:

Statement Showing differential Cost for the Period 200x

Component	Alternative 1 Keep Manual system	Alternative II Lease computer time	Benefit cost of leasing
Clerical salaries	₦40,000	₦ -	₦40,000
Manager’s salary	₦36,000	₦36,000	-
Computer rental	-	₦20,000	(20,000)
Supplies	₦4,000	₦ 8,000	(4,000)
Total	₦80,000	₦64,000	₦16,000

The annual cost savings of ₦ 6,000 available under the base alternative is a differential cost, because it represents the difference between total costs to be incurred under each alternative. Total cost of alternative one (1) is ₦80,000 and total cost of alternative two (2) is ₦ 6,4000.

Statement Showing Relevant Cost

Component	Alternative 1 Keep Manual system	Alternative II Lease computer time	Benefit cost of leasing
Clerical salaries	₦40,000	₦ -	₦ 40,000
Computer rental	-	₦20,000	(₦20,000)
Supplies	₦4,000	₦ 8,000	(₦ 4,000)
Total	₦44,000	₦28,000	₦16,000

It should be noted that relevant cost include Fixed Cost (clerical salaries) and Variable Cost (Supplies). This highlights the subtle difference between relevant cost and differential cost. Manager’s salary is irrelevant cost. Accounting supplies is relevant cost, because it is different between the alternatives.

Selecting from mutually exclusive projects or alternatives, every unlike costs are relevant. Unlike costs are those costs, which are different among the mutually exclusive alternative either in kind or in magnitude. Unlike costs may include both variable cost and fixed cost. Fixed Costs become avoidable when decision alternatives extend beyond relevant range. Unlike cost concept is a unique characteristic of relevant costing. It considerably reduces the data to be evaluated, because this concept assumes that costs which are identical for mutually exclusive project will in no way influence a selection between them. It is the cost that differs which will decide the alternative to be selected. Some authors use the term “avoidable and unavoidable cost” as unlike cost concept.

Adaptability of Relevant Cost Concept: Data procured from one of the companies under investigation: the company decided to accept a project ‘A’ but is faced with the problem as to which of the processes should be used to carry out this project.

Data X	Process	
	A	B
	₹	₹
VC per unit	1.50	1.20
FC:		
New Machinery x	50,000	100,000
Supervision per annum	12,000	12,000
Old machinery Idle Capacity xx	3,000	2,000
Building space xxx	4,000	3,000
Sale price per unit	3.00	3.00
Yearly demand in (Units)	32,000	32,000

Decision Criteria:

- x** Both the machines have an average life span of five (5) years, with no salvage value and are to be depreciated on a straight line basis.
- xx** Represents a portion of the depreciation charge for idle equipped. Since the new equipment in process ‘B’ is different, it needs less of the available idle equipment.
- xxx.** Represents the depreciation charge for a concrete structure that is presently out of use. Process ‘A’ requires the total space of this building, process ‘B’ which has more compact machinery, needs only two-thirds (2/3). It has an offer to rent this building for ₹ 6,000 per year. To rent a partial space in this building is impossible.
- xxxx** The idle capacity charge should be considered only if an opportunity cost is involved and it differs for the two (2) processes. It is presumed that no opportunity cost exists. Therefore, capacity value is zero. The opportunity costs for the building are identical for both the processes. If either alternative is chosen, the rent opportunity is foregone. Hence, solution can be presented as:

Data X: Presentation for Choice of Alternative

	Process	
	A	B
	₹	₹
VCs:		
5 yrs x 32,000 units x ₹ 1.50	240,000	-
5 yrs 32,000 units x ₹ 1.20	-	192,000
FCs:		
New Machineries	50,000	100,000
Supervision (not to be included)	-	-
Old machinery (not to be included)	-	-
Building (not to be included)	-	-
Total cost	290,000	292,000
Advantage of ‘A’ over ‘B’	2,000	-

Sunk cost with reference to decision making: FCs are those costs incurred to benefit the normal operations of business for a given period. FCs are referred to as sunk costs for decision making. Sunk costs are past committed costs, because of their having been committed in the past are unavoidable today.

- FCs are referred to as sunk costs for decision making. Sunk costs are essentially irrelevant to a decision.
- Sunk costs are past committed costs, having been committed in the past, are unavoidable today, but are essentially irrelevant to a decision making.
- Depreciation on fixed assets is never a relevant cost for short-run operating decisions, since depreciation is an allocation of costs incurred in a past period.
- If an asset can be sold for cash, this fact must be taken into account for decision making. Cash flow will become opportunity cost of decision to dispose of the asset. If remaining life of asset is given, may be appropriate to find out annual cost equivalent cost. The annual cash equivalent cost is the annual cash flow of an annuity at a specific interest rate for which the present value equals the salvage value received upon selling old asset.
- If disposal of an asset saves in taxation because of the tax-loss write off, it should be taken into account in analysis.

Common Costs: Common costs are costs incurred for services employed in the creation of two or more outputs. It cannot be clearly allocated to those outputs on a clearly justified basis. They are irrelevant to decision making until:

- Decision to eliminate or increase the service facility of resource for which common cost is incurred.
- A change in common cost results from a major change in one of the activities benefiting from such a cost.

In decision-making an accountant’s vital role is to provide relevant information for decision making. For this reason, it is necessary to present in a clear and understandable manner costs and benefits associated with each alternative. There are two approaches to the exercise of presenting relevant information. First approach is to simply present revenue and costs for the identified alternatives. Second approach is to present only differential revenue or costs or the differential net advantages between alternative choices.

Suppose a company has to take a decision, to purchase part from market or not. Data collected from the company can be presented in the following two (2) ways/approaches:

Statement ‘A’ showing the differential profit with complete costs and revenue details for identified alternatives

	Present practice		Purchase part	
	₹	₹	₹	₹
Revenue	-	20,000	-	20,000
Costs:				
Direct material	3,140		2,000	
Purchase part	-		3,400	
Direct labor	6,000		4,800	
Power	400		260	
Other costs	900		600	
Occupancy costs	1,600		1,600	
Gen. Admin.	6,000		6,000	
Total Cost		<u>18,040</u>		<u>18,660</u>
		<u>1,960</u>		<u>1,340</u>

Differential profit ₹ 1,906 – ₹ 1,340 = ₹ 620.

Statement ‘B’ showing costs relevant to decision.

Direct material	(-)	₦ 1,140
Direct labor	(-)	₦ 1,200
Purchased part	(+)	₦ 3,400
Power	(-)	₦ 140
Other cost	(-)	₦ <u>300</u>
Differential cost	(+)	₦ <u>620</u>

Both the presentations show that purchasing the part will reduce the profit by ₦ 620. Either presentation conveys the same information to the decision-maker but the presentation in statement ‘B’ is simple and more to the point than the complete presentation in statement ‘A’. Advantage of presenting strictly relevant analysis suggests that this approach concentrates the attention of management on those elements in the decision, that are in fact relevant. If decision maker reposes complete confidence in analyst, then less details may suffice. The choice of an incremental or total analysis is a matter of individual preference. In cost accounting (A management Emphasis) by Charles T. Horngren, Accountant’s cost Handbook by Bullock, Keller and Vlasho referred to these alternative approaches – “Relevant cost and Decision Making”. In all practical purposes, it is advisable to exclude common costs from decision analysis.

Opportunity Cost: “The value of a benefit sacrificed in favor of an alternative course of action”. If accepting an alternative requires use of facilities or resources that are used for some other purposes there arises an opportunity cost. The opportunity cost is measured by the profit that would have been earned, if the resources or facilities had been used for second best alternative. It is not easy to measure opportunity cost in all cases, but the relevance of opportunity cost in decision making cannot be disputed.

Data Y: Texlon Nig. Plc has ₦100,000 worth of materials available, which can be sold for ₦120,000 or process this into a product worth ₦160,000 for additional cost of ₦50,000. The processing is not acceptable based on the following analysis:

	₦	₦
Revenues	-	160,000
Costs:		
Processing costs	50,000	
Current value of material	100,000	
Opportunity costs	20,000	<u>170,000</u>
Loss	-	(10,000)

Without consideration of opportunity costs of ₦20,000 further processing appears to be acceptable based on data.

	₦	₦
Revenues	-	160,000
Costs:		
Processing costs	50,000	
Current value of material	100,000	<u>150,000</u>
Profit	-	10,000

A situation may require consideration of present opportunity cost and future opportunity cost. This may be clear by consideration of another set of data of TEXLON Nig. Plc. The company has presently ₦20,000 million in cash available. Of this cash ₦ 5,000 million is to be used in five (5) years from now for the acquisition of machinery, and ₦5,000 million as working capital of a planned project. This project, has been estimated will yield ₦ 80,000 million in revenue. Over the following years it will incur variable expenses of ₦60,000 million. Presently, the company is evaluating another project with an expected life of 10 yrs, a revenue yield of ₦120,000 million and a VC of ₦110,000 million. All that is needed is the working capital of ₦10,000 million immediately. A strong case can be made for using available costs for the project under consideration, if present and future opportunity costs are ignored based on analysis:

	₦’ M
Total Revenues	120,000
Total variable expenses	<u>110,000</u>
Advantage	10,000

If however, present and future opportunity costs are considered, the project presently under consideration looks entirely different:

	₹' M	₹' M
Revenues	-	120,000
Total variable expenses	110,000	
* Future Opportunity Costs	15,000	
* Present Opportunity Costs	<u>3,500</u>	<u>128,500</u>
Disadvantage		<u>(8,500)</u>

Working Note	₹' M	₹' M
* Future Opportunity Cost:		
TRs (on planned project)	-	80,000
TCs (on planned project)	60,000	
VCs	<u>5,000</u>	<u>65,000</u>
		15,000

Working Note	₹' M	₹' M
* Present Opportunity Cost:		
Cash Available	10,000	
Interest, if invested (say)	7%	
Years of investment	5	
	3,500	

Cost Indifference Point: A cost indifference point is the point at which total cost (fixed cost and variable cost) of two alternatives under consideration is identical. A company may have two methods available for production and it may so happen that at lower levels of activity one method is suitable up to a particular point and beyond that another method is suitable. The question arises at what level of capacity choice shifts from one production method to another production method. This point is called cost indifference point and at this point total cost is identical for the two alternatives.

Cost indifference point will occur at a point where:

$$TC \text{ of alternative 'A'} = TC \text{ of alternative 'B'}$$

OR

$$\left[\begin{array}{c} \text{Total FC of alternative 'A'} \\ + \\ \text{Total VC of alternative 'A'} \end{array} \right] - \left[\begin{array}{c} \text{Total FC of alternative 'B'} \\ + \\ \text{Total VC of alternative 'B'} \end{array} \right]$$

$$CIP = \frac{\text{Differential FC}}{\text{Differential VC per Unit}}$$

Cost indifference points are useful in analyzing many types of alternative choice decisions such as choosing between alternative production methods, marketing plans or quality control programmes.

Cost Indifference Point/Break-Even Point: It is necessary to contrast CIP with BEP. Determination of CIP involves equality total cost of the two plans or division of differential FC by differential VC. It is the point at which total cost lines under the two alternatives intersect each other. At BEP, total cost line (TCL) and total revenue line (TRL) for a particular alternative intersect each other. Cost indifference point (CIP) analysis compares the cost of two alternatives, whereas break-even (BEP) analysis compares TC and TR for a single product.

Data Z: TEXLON Nig. Plc provides following the information:

Method A:

Fixed cost ₦ 12,000
 Variable cost ₦ 3.50 per unit

Method B:

Fixed cost ₦ 36,000
 Variable cost ₦ 2.00 per unit

The accountant was required to determine:

- Cost indifference point (CIP), the level the company will achieve equal results by either method.
- Graphical presentation.
- Contrast CIP with BEP

Application 1

$$\begin{aligned}
 \text{CIP} &= \text{TC of method 'A'} = \text{TC of method 'B'} \\
 &\text{Let } x \text{ be the level of sales} \\
 &\text{By putting the values} \\
 12,000 + ₦ 3.50x &= ₦ 36,000 + 2.00x \\
 X &= 16000 \text{ units.}
 \end{aligned}$$

At the activity level of 16000 units, both the methods will yield equal result or both methods provide identical production costs. Up to this level of 16000 units, method 'A' is suitable and beyond this point, method 'B' is suitable. Therefore, this is the CIP.

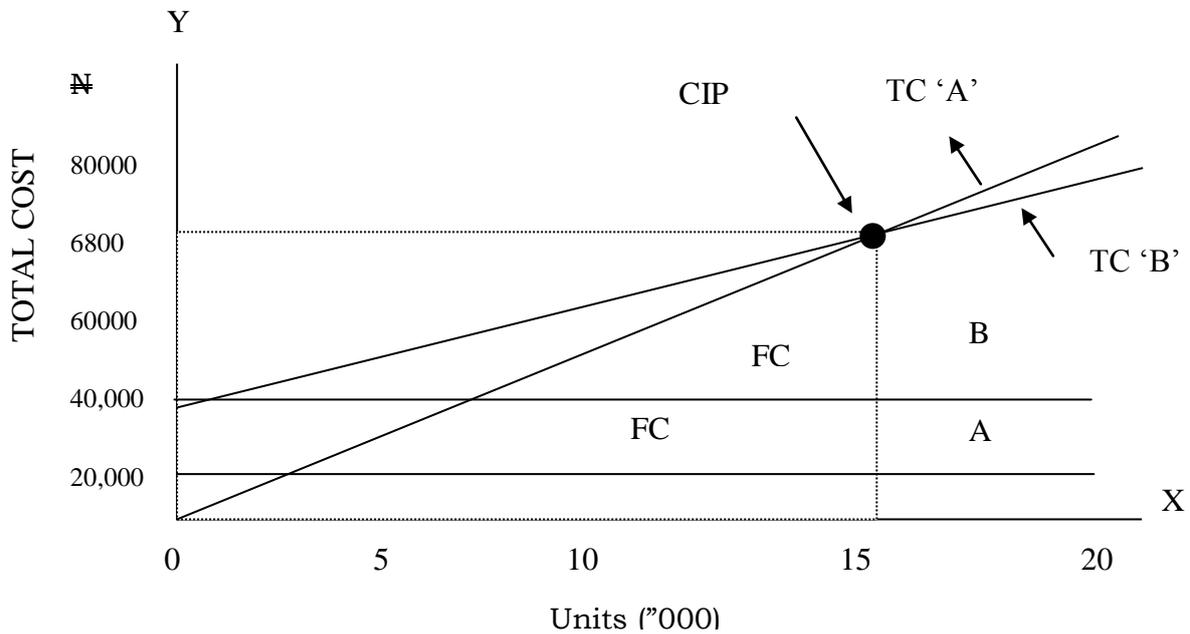


Fig 1: TC lines intersect at CIP. The higher FC of 'B' eventually offset by lowers VC.

The graphic solution of CIP using differential costs presented in fig 1. The differential FC is ₦ 2400 (₦ 36,000 - ₦ 12000). The slope of the differential VC line is ₦ 1.50 per unit (₦ 3.50 - ₦ 2.00). The differential VC exactly offsets the differential FC at 16000 units.

The CIP presented graphically in fig 1: The lower FC of production of method 'A' means that initially, the FC line for 'A' is lower than the TC line for 'B'. However, the higher VC of 'A' causes the TC line of 'A' to have a steeper slope. Eventually, at the CIP lower FC of method 'A' is entirely offset by its higher unit VC.

Application II:

$$\begin{aligned}
 \text{CIP} &= \text{Differential FC} \div \text{Differential VC per unit} \\
 &= \text{₹ } 24,000 \div \text{₹ } 1.50x \\
 &= \text{₹ } 16,000 \text{ units.}
 \end{aligned}$$

Application III: Chart showing BEP and CIP

Method A

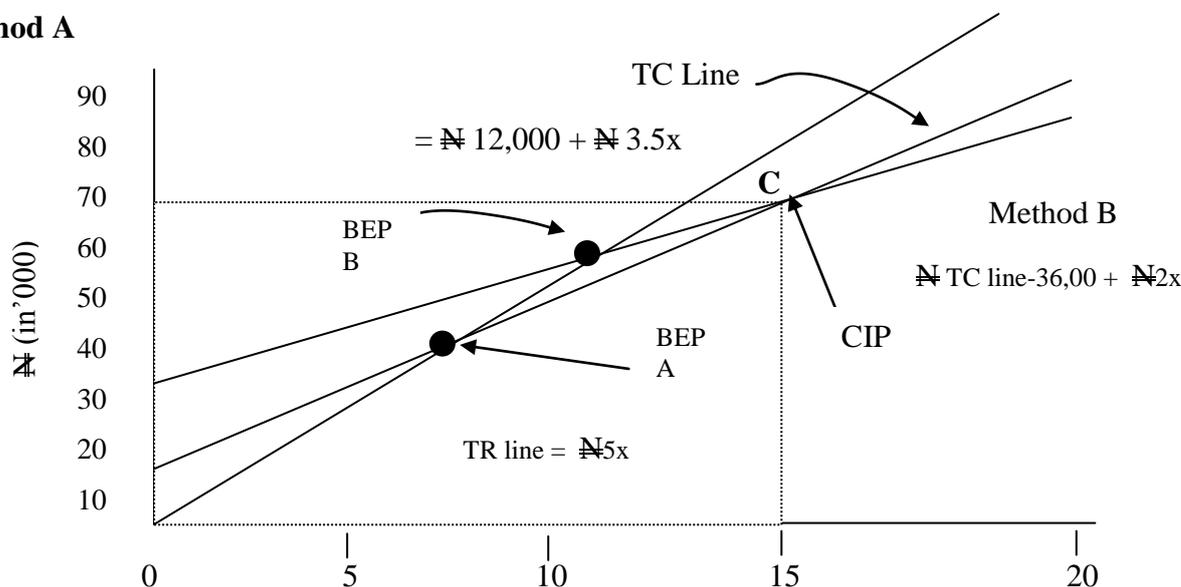


Fig II: BEP Occurs when TR line intersects TC line at alternative. CIP occurs when two TC lines intersect.

In the graph above, indifference point ‘C’ occurs where the two cost lines intersect, that is, where the TC is identical for the two alternatives. In the above 16000 units the advantage of lower FC of ‘A’ is offset by the lower VC rate of B. Break-Even points. ‘A’ and ‘B’ occur when the TR line intersects each of the TC lines. The BEPs are completely different from the cost indifference point (CIP). The two analyses provide complementary but different information. Both may be used in reaching a decision. For example, if expected sales are 17000, the cost indifference analysis indicates that method ‘B’ should be selected because it yields a higher net income than method ‘A’. However, if the risk of operating below BEP is very high, managers may like to choose ‘A’, because it has a greater margin of safety. Management may be willing to forego the expected extra income from ‘B’ for the added safety of ‘A’.

Conclusion

- Relevant costs are used in evaluating alternative prize indifference point (CIP).
- Sunk costs are not relevant for decision making.
- The FC of the organization must be examined must be examined to see whether it will change due to decision under consideration. If decision variables cause a change in FC, then FC is relevant to the analysis.
- Depreciation on an asset purchased in the past is irrelevant to decision making.
- If assets can be sold, then cash flow due to disposal is relevant for decision making.
- Allocated joint costs are not relevant to single product decision. Joint costs become relevant when one alternative is to terminate.

- Costs after split-off points are relevant to decision making.
- Opportunity cost represents the benefit to accept another alternative. This must be considered in decision making.
- If an alternative involves investment, then interest on investment is a major consideration.
- When choice is involved between two alternatives, emphasis should be find out not advantage of taking a particular decision. Steps taken are:
 - Identify revenue for each alternative.
 - Identify cost for each alternative taking in a particular care to include opportunity cost.
 - Identify profit for each alternative and profit (loss) of preferring one alternative to another.

Under “relevant cost concept, managers are placed in a tight-corner in decision making analysis of the organization and in achieving the targeted production trend.

Research Limitations/Implications:

- Financial constraint is not the major limiting factor, but the scope of coverage due to the conceptual understanding of the terminology of relevant cost.
- The challenges in understanding the responses from the respondents on the subject matter, relevant cost is purely accountant’s terminology which must be virtually interpreted to the micro – level for a clear understanding of a layman.
- Differential/incremental cost concept is another stumbling- block on the part of the respondents, which must also be explained beyond reasonable doubt.
- It is a challenging concept even to a privileged accounting scholar.

Originality/Value: Relevant cost concept is very important to decision mangers because it will reinforce the need to highlight the subtle difference between relevant costs and differential costs. It will enhance a greater performance of the manager and the organization as a whole when appropriate cost expenditures are taking into consideration, when costs are determined and charged/allocated to the cost centers.

REFERENCES

1. Agrarwal M.L (1988): Cost Accounting, Sahitya Bhawan, Hospital Road, Agra, India.
2. Chakraborty H (1988): Advance Accounting, 8th Ed. Oxford University Press Walton Street, Oxford New York, U.S.A.
3. Gupta R.L (1988): Advance Accounting: 4th Edi Sultan Chand and Sons. 23 Daryaganj New Delhi, India.
4. Gupta R.K (1987): Cost Acconting: Agra Book Store Educational Publishers.
5. Gupta R.L & Radhaswamy M (1993) Revised Education, Sultan Chand & Sons, 23 Daryaganj, New Delhi-India.
6. Jain P K & Khan M Y (2003): Cost & Financial Management, Tata Mc-Graw Hill Publishing Co. Ltd.
7. Jain RK & Khan MY (2000): Management Accounting Tata, Mc-Graw Hill Publishing Co. Ltd.
8. Maheshwar. SN (1992): Management Accounting and Financial Control, 8t Ed, Sultan Chand & Sons, 23 Daryaganj New Delhi.
9. Oye Akinsulire (2002): Financial Management 4th Ed. Ceemol Nigeria Ltd. 63, Palm Avenue Mushin Lagos, Nigeria.