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The study of "Cost-Benefit Analysis" of Multi-Products of selected Manufacturing Industries with special reference to Nashik Industrial Area

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ABSTRACT- A study entitled "The study of "Cost-Benefit Analysis" of Multi-Products of selected Manufacturing Industries with special reference to Nashik Industrial Area" was conducted. Objectives of the study included identifying current method of costing of individual product, identifying the current method of associating benefits for each product, identifying and analyze Non-Financial Cost and Non-Financial Benefits of each products, finding out method of doing the Cost-Benefit Analysis of each product at different stages of Product Life Cycle, testing the application of Product Life Cycle cost benefit method, and proposing a tool to calculate the cost of product. 400 multi-product manufacturing units (accounts manager) from Nashik district were surveyed through a survey questionnaire. Overall the study concludes that current costing methods are inappropriate for accurate ascertainment of cost and benefits associated with multiple products. They would benefit from a technique like activity-based costing.

Keywords: Cost-benefit analysis; Manufacturing Industries; Nashik district; Activity-Based Costing

INTRODUCTION

Cost-benefit analysis, or CBA, assesses and examines the project's costs and benefits to determine whether it is beneficial. CBA examines all project costs and benefits, both tangible and intangible. Its origins are in the research of Jules Dupuit and Alfred Marshall, and it was further developed by the U.S. Corps of Engineers in the 1930s. An evaluation of all potential costs and revenues is conducted by prudent management through a CBA before starting a new project. The analysis's conclusion determines if a corporation should explore other choices or if a project is financially feasible. A cost-benefit analysis is the process of evaluating the expected benefits and expenses of a decision to determine its viability (CBA). Businesses can determine the worth of a choice by totaling all potential gains from a course of action and subtracting all associated costs. If the benefits of the decision outweigh the drawbacks, it is most likely advantageous for the business. A cost-benefit analysis typically excludes quantitative information or exact measurements. Consultants or analysts could create models, for instance, to quantify intangibles like the benefits and drawbacks of relocating to a particular location.

A study entitled "The study of "Cost-Benefit Analysis" of Multi-Products of selected Manufacturing Industries with special reference to Nashik Industrial Area" was conducted. 400 multi-product manufacturing units (accounts manager) from Nashik district were surveyed through a survey questionnaire. This paper presents the findings, suggestions, and conclusions of the study.

FINDINGS

a. FINDINGS RELATED TO PROFILE

i. The distribution of Number of products manufactured was 81 of 2 group; 110 for 3-5 group; 115 for 5-10 group; and 94 for >10 group.

ii. The division of Standing of the unit was 28 of <5 years group; 115 for 5-10 years group; 134 for 10-15 years group; and 123 for >15 years group.

iii. The distribution of Location of the unit - MIDC was 140 of Satpur group; 135 for Ambad group; 112 for Sinnar group; and 13 for Gonde group.

iv. The spread of Number of employees was 127 of <50 group; 124 for 50-100 group; and 149 for >100 group.

v. The distribution of Average turnover was 57 of <Rs.10 crores group; 195 for Rs.10-100 crores group; and 148 for >Rs.100 crores group.

vi. The division of Sector in manufacturing was 76 of Automobiles group; 79 for Electrical group; 69 for Machinery group; 85 for Pharma group, and 91 for other group.

vii. The spread of Method currently used for costing was 76 of Job group; 89 for Process group; 91 for Batch group; 79 for Unit group; and 65 for mix/other group.

b. INFERENTIAL ANALYSIS

i) The average disagreement for accuracy of current methods of cost ascertainment was found to be 85% and the result going by the p-value was statistically significant.

ii) The average disagreement for accuracy of current methods of associating benefits was found to be 80% and the result going by the p-value was statistically significant.

iii) The average agreement for consideration of non-financial cost and non-financial benefits was found to be 69% and the result going by the p-value was statistically significant.

iv) The average disagreement for cost-benefit ascertainment for each stage of product life cycle was found to be 81% and the result going by the p-value was statistically significant.

v) The average agreement for benefit of product life cycle method was found to be 79% and the result going by the p-value was statistically significant.

vi) The average agreement for use of Activity-Based-Costing was found to be 87% and the result going by the p-value was statistically significant.

c. FINER DATA ANALYSIS

The demographic variables show no impact on response patterns of any of the six sections of the questionnaire.

SUGGESTIONS

1. In line with the sixth objective it is suggested that the multiple-product manufacturing units should implement activity-based costing for accuracy in costing. This suggestion has strong support from literature and also has been validated by the respondents.
2. Additionally the manufacturing units should implement a proper product life-cycle costing technique. This suggestion, too, has strong support from literature and also has been validated by the respondents.
3. Manufacturing units should hire services of experts like Chartered Accountants, and Cost Accountants to improve their costing systems.
4. The existing employees should be trained to gain knowledge on activity-based costing, and product life-cycle costing.
5. They should use software like Tally ERP or other ERP systems that facilitate clear establishment of cost centers.
6. Association like the Chambers of Commerce should arrange for seminars on cost-benefit analysis concept and practices.

CONCLUSION

1. Different types of costing methods are practiced by the manufacturing units from Nashik district. These include job costing, process costing, batch costing, unit costing, and other/mix methods of costing.
2. The current methods do not lead to accurate cost ascertainment of individual products. This conclusion has been drawn based on sizable disagreement to statements: Current methods of costing leads to accurate ascertainment of direct material cost for individual products, Current methods of costing leads to accurate ascertainment of direct labor cost for individual products, Current methods of costing leads to accurate ascertainment of direct expenses cost for individual products, Current methods of costing leads to accurate ascertainment of indirect material cost for individual products, Current methods of costing leads to accurate ascertainment of indirect labor cost for individual products, Current methods of costing leads to accurate ascertainment of indirect expenses cost for individual products, All relevant costs are duly considered in the current method of cost ascertainment, The division of common costs over multiple products is fairly accurate, The basis for charge of overheads to products is reasonably accurate and Overall the cost ascertainment for individual products is fairly accurate.
3. The current methods do not lead to accurate benefit ascertainment of individual products. This conclusion has been drawn based on sizable disagreement to statements: Revenues are accurately ascertained in case of joint products, Revenues are accurately ascertained in case of by products, In case of by-products of small value the income is treated as Miscellaneous Income , Alternatively the income of by-products of small value is deducted from the total costs, In case of joint products the sales value is duly adjusted for post-split-off point costs, Profit margins in case of joint products are accurately known, Contribution of joint products towards fixed costs and profit is fairly accurately known, In case of joint revenue the income is split based on fairly accurate basis, Reliable product-wise benefits information is available for decision making and Benefits like sale value of scraps are accurately accounted.
4. There are major Non-Financial Cost and Non-Financial Benefits of each products. This conclusion comes from a wide agreement to statements: Opportunity costs exists and can be considered for decision making, Non-financial costs like environmental costs are of significance, Costs of poor quality are important, Social costs can be identified and should be considered in decision making, Social benefits like providing employment should also be

considered in decision making, All relevant costs should be considered in decision making, All relevant benefits should be considered in decision making, "Loss leadership pricing" sacrifices should be taken into account, Benefits like increase in goodwill need to be considered and Similarly contributions towards development of brand loyalty and brand equity should be duly considered.

5. The current methods do not lead to accurate cost-benefit ascertainment for each stage of product life cycle. This conclusion has been drawn based on large-scale disagreement to statements: The costs are considered keeping in mind the entire product life cycle, The benefits are considered keeping in mind the entire product life cycle, Costs related to introduction phase of products are duly considered, Benefits related to introduction phase of products are duly considered, Costs related to growth phase of products are duly considered, Benefits related to growth phase of products are duly considered, Costs related to maturity phase of products are duly considered, Benefits related to maturity phase of products are duly considered, Costs related to decline phase of products are duly considered and Benefits related to decline phase of products are duly considered.
6. The application of Product Life Cycle cost benefit method would be effective. Respondents overwhelmingly supported this proposition through agreements to statements: Product life cycle cost benefit method is a rational method, The method distributes costs and benefits more fairly in relation to a particular stage of the product life cycle, The product life cycle cost benefit method is useful in strategic decision making, The product life cycle cost benefit method is useful in tactical decision making, Products can be competitively priced using product life cycle method, Strategies like loss leader pricing are highly effective, The product life cycle cost benefit method is more practical method, Product life cycle method aligns well with both internal and external business environment factors, Product life cycle method duly reflects the transition of products from one stage to another on the product life cycle and Product life cycle method is holistic in its approach
7. Activity-based Costing method would be appropriate for the manufacturing units with multiple products. This conclusion has been reached based on substantial agreement to statements: Activity-based-costing can lead to more accurate costing in a multiple product manufacturing unit, ABC helps in identifying cost behavior and facilitates cost control , ABC helps in identifying cost behavior and facilitates cost reduction, ABC considers all activities and hence is a comprehensive method of costing, ABC traces costs to areas of managerial responsibility, processes, customers, departments besides the product costs., ABC helps in better decision making, ABC provides cost driver rates which are important for cost management, ABC helps in identification of excess or spare capacity, ABC considers all activities and hence is a comprehensive method of costing and ABC is a more professional approach to costing of multiple products

Overall the study concludes that current costing methods are inappropriate for accurate ascertainment of cost and benefits associated with multiple products. They would benefit from a technique like activity-based costing.

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