

A Comparative Analysis of Perceived and Actual Benefits from Implementation of Activity Based Costing in Selected Manufacturing Units in India

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Abstract

The Activity based costing (ABC) technique for apportionment of overhead cost is considered superior over the traditional costing system. There are various perceived benefits before implementing the ABC system in any organization. This study is an attempt to know whether the perceived and actual results are the same or not for implementing the Activity Based Costing System in selected manufacturing units. The study is based on primary data collected through questionnaire. To analyze data, descriptive statistical method is used and to know the difference between the means of perceived benefits and actual benefits, paired sample t-test has been used through SPSS version-22. The study is based on the 52 medium and large scale manufacturing units which have implemented the ABC system. We found no significant difference between perceived scope and benefits and actual scope and benefits derived through ABC system implementation.

Keywords: Activity Based Costing, ABC system, Implementation of ABC, Manufacturing sector

Introduction

In the present environment of high degree of competition, there are dynamic changes in the manufacturing sector. Today, the relevance of cost accounting is not to determine the cost of the product but find out how through application of this method, we can reduce the cost of the product. While several techniques are used to control and reduce the cost; Activity Based Costing (ABC) technique is also one of them. This is a modern technique for allocation of overhead cost. Researchers have analyzed the several benefits of implementation of ABC system as it provides better cost information which helps to the top management to take accurate decisions and to increase the profitability by reducing the cost and eliminating the non value added activities.

Previous studies have revealed many motives

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behind implementation of ABC system such as determining product costs with higher degree of accuracy, better overhead cost allocation, and increase in profitability, elimination of non value added activities and so on. Researchers have done a lot of work on the benefits of implementation of ABC system, factors which are significant for the adoption of ABC system, challenges faced during the implementation of ABC system etc., but still no study is done on comparison between the perceived benefits of implementation of ABC system and the actual benefits received by implementing the ABC system. This paper is an attempt to know whether or not the perceived and actual results of implementing the ABC are the same in selected manufacturing units.

Objective of the Study

The basic objective of the study is to determine whether or not the perceived scope and benefits and the actual scope and benefits of implementing the ABC system are the same.

Research Methodology

Data Collection Procedure- This research is based on primary data collected through the survey method. The questionnaire contains questions related to the perceived benefits and the scope for implementing the ABC system and then to analyze actual benefits and the scope after implementing the ABC system. These are measured in 5 point scale, 1 being least and 5 being maximum value.

Sample- Medium and large scale units are targeted for the study as there are more scopes to adopt ABC system in medium and large scale units as compare to small scale units. Data are collected through mails, telephonic interview and direct interview. The study targeted 300 manufacturing firms out of which only 130 responses were received (approx 44 percent response rate). Out of the 130 responses only 54 firms have been using activity based costing (approx 42 percent). Out of these 54 firms two responses were not appropriate so we have not included in the study. Finally, the study is based on the 52 firm which have implemented the ABC system.

Method- SPSS Version-22 has been used to process data. Descriptive statistics such as Standard deviation, average, minimum and maximum value are presented to give visual description of sample data. Paired sample t-test has been used to ascertain the difference between means of perceived benefits and actual benefits and difference between means of perceived scope and actual scope.

Review of Literature

Researchers have done significant works on motives for implementation of ABC system. Researchers identified many motives such as: accurate cost information for pricing decisions, increase in profitability, cost reduction and control (Basteki, H. & Ramadan, S. 1998). ABC system helps to improve organizational and financial

performance of the organization. By having the awareness regarding activities, the organization has better understanding for controlling and reduction of the cost. It provides more accurate cost information which helps management for decision making (Oseifuah, 2018). In a case study of a bicycle company conducted by Lu et al. (2017) found that the cost information received through the traditional costing system by using volume as a single base for apportionment of the overhead cost was not correct. According to them the cost information received through the ABC system, on the other hand, was more accurate and helpful to fix the price of the products more effectively and to provide an edge over the competitors. Due to product diversity and high competition the traditional costing system is not appropriate and hence, there is a need of adoption ABC system. The same study observes that implementation of ABC system helps to take accurate decision in various domains such as: ascertainment of high degree of accurate cost data, determination of correct selling price, identifying the process where there is a need to improve (Almedia & Cunha 2017). Inability to provide correct information system by traditional costing method is found to be the most important motive for implementing the ABC system along with other motives like: product diversification, increase in overhead cost and competition (Salawu, & Ayoola, 2012; Ahmadzadeh et al., 2011). The study on cost management practices in India for identification of non value added activities is found as the prime motive for the introduction of ABC system while budgeting to have competitive edge over price, quality and performance, performance measurement system and pricing decisions are also significant factors motivating the implementation of ABC system (Anand, M. et al., 2005, Salem & Mazhar, 2014).

The perception of the company regarding the capability of ABC system for controlling the cost is

found to be a statistically significant in the study by James (2013); in the same study, among other factors competitors action with respect to ABC system adoption and the proportion of the overhead cost to the total cost are also found to be significant. Most of the literature explore motives for the adoption of ABC system but no study explains whether there is any difference between the perceived motive and the actual benefits derived by adopting ABC system or not.

Data Analysis and Findings

Comparison of Perceived and Actual benefits from implementing ABC system:

Hypothesis to be tested

H01: There is no difference between perceived benefits and actual benefits of implementing the ABC system.

H11: There is significant difference between perceived benefits and actual benefits of implementing the ABC system

To compare the perceived and actual benefits from implementation of Activity Based Costing, descriptive statistics have been presented in table-1 and table-2 and to find out whether there is any significant difference between the means of perceived benefits and actual benefits paired sample t-test has been undertaken (see table-3).

Table-1-Perceived Benefits of implementation of ABC system – Descriptive Statistics (in Appendix)

The most important perceived benefits from the implementation of ABC system are appropriate pricing decisions; better overhead cost allocation and determination of accurate product cost (see table-1).

The most important benefits from the implementation of ABC system actually received

are better overhead cost allocation, determination of accurate product cost and improvement in decision making (see table-2).

Table-2-Actual Benefits from the implementation of ABC system – Descriptive Statistics (in Appendix)

Table-3-Paired Samples t-test- for perceived and actual benefits of implementing the ABC system (in Appendix)

Paired sample t-test is used to know that whether there is any difference between the perceived benefits and actual benefits of implementing the ABC system. In the Table-3 the t-value is 2.681 with a significance level of .017 from this can interpret that there is significant difference between perceived benefits and actual benefits of implementing the ABC system as the significance value is .017 which is less than .05. The value of Standard Error is also very low which indicates the fairness of the result. So the first Null hypothesis is rejected.

Comparison of Perceived scope and Actual scope of implementing ABC system:

H02: There is no difference between perceived scope and actual scope of implementing the ABC system.

H12: There is significant difference between perceived scope and actual scope of implementing the ABC system.

To compare the perceived scope and actual scope of implementation of Activity based costing descriptive statistic has been used (see table-4 and table-5) and to find out whether there is any difference between the means of perceived scope and actual scope paired sample t-test has been used (see table-6).

Table-4- Important Perceived Areas for the implementation of ABC system- Descriptive

Statistics(in Appendix)

The most important perceived areas for the implementation of ABC system are product costing, pricing decisions and product mix decisions (see table-4).

The most important areas of scope for the implementation of ABC system actually reflected after implementing ABC system are pricing decisions, product costing and product mix decisions (see table-5).

Table-5- Important Actual Areas for the implementation of ABC system- Descriptive Statistics(in Appendix)

Table-6- Paired Samples t- test- for perceived and actual scope for implementation of ABC system(in Appendix)

Again paired sample t-test is used for hypothesis testing that whether there is any difference exists between the perceived scope and actual scope of implementing the ABC system. In the Table-6 the t-value is 2.671 with a significance level of .022. Thus null hypothesis is rejected and result is interpreted that there is significant difference between perceived scope and actual scope of implementing the ABC. The value of Standard Error is also very low which indicates the fairness of the result. Thus null hypothesis is accepted.

Discussion

The present study was conducted to know whether the perceived scope and actual scope of ABC implementation is the same or not and whether the perceived benefits and actual benefits of ABC implementation are the same or not. From the above data analysis, the study found by using t-test (as shown in Table-3) that there is significant difference in the perceived benefits and actual benefits of ABC implementation. This implies that the companies who have implemented the ABC

system with pre-determined benefits to be received, derived the same benefits after the adoption of ABC system. So the first null hypothesis is rejected. Also for the perceived scope and actual scope, the study found by using t- test (as shown in Table-6) that there is also significant difference in the perceived scope and actual scope of ABC implementation. So null hypothesis is rejected. Product mix decision, cost reduction, pricing decision and forecasting are the areas where the scope of actual implementation of ABC system were more as compare to the perceived. On the other hand, stock valuation, product costing, budgeting and planning, process improvement, capital investment decision, performance measurement, quality control and compensation system are the areas where the scope of actual implementation of ABC system were less as compare to the perceived.

Conclusion and Implications of the study:

From above data analysis, we can conclude that the perceived benefits from the implementation of ABC system are the actual benefits derived from implementing ABC system are different. This is a good indication for the other companies that are in the process of implementing the ABC system or thinking to adopt ABC system in future. We recommend other companies also to implement the ABC system to get the numerous benefits which are associated with the implementing such as controlling and reduction of cost, having competitive edge, increase profitability, more accurate cost information for decision making etc.

Limitations

The results are confined to sample units only. The outcome of the present study may not be applicable for the other companies. The interpretations are based on information received so the study may be affected due to the respondent biasness. As the study is related to costing system, many companies were

not ready to share their information so we have to restrict the finding of the study on the sample unit of 52 units only who have implemented the ABC system, to get more concise results the sample should be large.

Scope for Further Studies:

In the study we have considered only manufacturing companies and as we are aware that at present the service sector is also implementing the ABC system. So, further study can be conducted to know whether in the service sector, there is any difference in the perceived and actual benefits or not. The present study considered only medium and high level manufacturing companies. Hence, there is a scope for further study for micro and small level firms.

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Appendix

Table 1: Perceived Benefits of implementation of ABC system – Descriptive Statistics

Response Options	N		Mean	Std. Deviation	Variance	Minimum	Maximum
	Valid	Missing					
More Accurate Product Cost	52	0	4.58	.58	.33	3	5
Better Overhead Cost Allocation	52	0	4.69	.55	.30	3	5
Increase In Product Quality	52	0	3.27	.96	.92	1	5
Increase In Profitability	52	0	4.27	.72	.52	2	5
Assistance In Cost Reduction Efforts	52	0	4.12	.59	.35	3	5
Cost Control Improvement	52	0	4.19	.63	.40	3	5
Better Performance Measurement	52	0	3.38	.70	.49	2	5
Elimination Of Waste	52	0	3.96	.45	.20	3	5
Encouragement To Commitment to Quality	52	0	3.15	.67	.46	2	5
Increased Customer Satisfaction	52	0	3.15	.67	.46	1	5
Decrease In Manufacturing Cycle Time	52	0	3.77	.76	.58	2	5
Increase In Employee Productivity	52	0	3.65	.85	.72	2	5
Increase In The Effectiveness Of Budgeting	52	0	3.88	.71	.51	2	5
Decision Making Improvement	52	0	4.38	.80	.65	2	5
Increase In Competitive Capability	52	0	4.19	.80	.64	3	5
Improvement in Shareholder Value	52	0	3.31	.62	.38	1	5
More Adequate Pricing Decisions	52	0	4.69	.47	.22	4	5

Table 2: Actual Benefits from the implementation of ABC system – Descriptive Statistics

Response Options	N		Mean	Std. Deviation	Minimum	Maximum
	Valid	Missing				
More Accurate Product Cost	52	0	4.42	.758	2	5
Better Overhead Cost Allocation	52	0	4.58	.703	2	5
Increase In Product Quality	52	0	3.23	.863	2	5
Increase In Profitability	52	0	4.08	.935	2	5
Assistance In Cost Reduction Efforts	52	1	4.04	.735	2	5
Cost Control Improvement	52	0	4.15	.732	2	5
Better Performance Measurement	52	0	3.42	.643	2	5
Elimination Of Waste	52	0	3.77	.765	2	5
Encouragement To Commitment to Quality	52	0	3.23	.815	2	5
Increased Customer Satisfaction	52	0	3.15	.732	2	5
Decrease In Manufacturing Cycle Time	52	0	3.73	.778	2	5
Increase In Employee Productivity	52	0	3.50	.860	2	5
Increase In The Effectiveness Of Budgeting	52	0	3.69	.736	2	5
Decision Making Improvement	52	0	4.35	.892	2	5
Increase In Competitive Capability	52	0	4.31	.884	2	5
Improvement in Shareholder Value	52	0	3.19	.634	2	5
More Adequate Pricing Decisions	52	0	4.23	.908	2	5

Table 3: Paired Samples t-test- for perceived and actual benefits of implementing the ABC system

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Perceived - Actual	.09250	.13801	.03450	.01896	.16604	2.681	16	.017

Table 4: Important Perceived Areas for the implementation of ABC system- Descriptive Statistics

Response Options	N		Mean	Std. Deviation	Variance	Minimum	Maximum
	Valid	Missing					
Stock Valuation	52	0	3.38	1.13	1.29	2	5
Product Costing	52	0	4.58	0.50	0.25	4	5
Product Mix Decision	52	0	4.15	0.73	0.54	3	5
Cost Reduction	52	0	3.96	0.82	0.68	2	5
Budgeting And Planning	52	0	3.62	0.75	0.57	2	5
Pricing Decision	52	0	4.38	0.64	0.41	3	5
Process Improvement	52	0	3.35	0.89	0.80	2	5
Forecasting	52	0	3.12	0.95	0.91	1	4
Capital Investment Decisions	52	0	3.19	1.33	1.76	1	5
Performance Measurement	52	0	3.00	1.39	1.92	1	5
Quality Control	52	0	2.81	1.36	1.84	1	5
Compensation System	52	0	2.27	1.12	1.24	1	4

Table 5: Important Actual Areas for the implementation of ABC system- Descriptive Statistics

Response Options	N		Mean	Std. Deviation	Minimum	Maximum
	Valid	Missing				
Stock Valuation	52	0	3.27	1.079	2	5
Product Costing	52	0	4.27	.604	3	5
Product Mix Decision	52	0	4.23	.863	3	5
Cost Reduction	52	0	4.04	.662	2	5
Budgeting And Planning	52	0	3.58	.643	2	4
Pricing Decision	52	0	4.46	.582	3	5
Process Improvement	52	0	3.19	.801	2	5
Forecasting	52	0	3.15	.834	1	5
Capital Investment Decisions	52	0	2.77	1.210	1	5
Performance Measurement	52	0	2.46	1.363	1	5
Quality Control	52	0	2.27	1.430	1	5
Compensation System	52	0	1.85	1.084	1	4

Table 6: Paired Samples t- test- for perceived and actual Areas for implementation of ABC system

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Perceived - Actual	.18917	.24534	.07082	.03329	.34505	2.671	11	.022