

## Investigating the Probability of the Implementation of ABC System in the Petrochemical Companies Located in the Special Economic Zone of Imam Khomeini Port

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**Abstract:** this study is an attempt to study the effective factors on activity based costing (ABC) using in petrochemical companies in Bandar-e- Emam Zone. The SPSS was used to analysis the data. The questionnaires were collected and the data were analyzed. The findings show that the executing of activity based costing is possible in Bandar-e-Emam Zone.

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**Keywords:** activity based costing (ABC) , costing system, cost management

### Introduction

Rapid changes of global economy patterns as well as tight competition in global markets have recently diverted the concentration of companies from the work force issue to the capital concept. Most industries have replaced the traditional methodologies of cost calculation by modern ones. An organization that wishes to enter this competitive atmosphere has no choice to employ modern methods. Activity Based Costing (ABC) is considered as the supplementary of traditional Absorption Costing method which was employed for submitting reports to out of organization like investors, creditors and taxation authorities.

This methodology provides an appropriate basis for the collection of beneficial accounting information which is used in tactical as well as strategic decisions which are made about the possibility of investment in new companies. In the companies acting in such a tight competitive condition, cost management is a vital and important matter. Nowadays, ABC as a part of cost management process is considered as a very effective management tool. In cost management field today's managers more than other days are concentrated on infrastructural activities rather than products. When activities are controlled well enough, costs are reduced which in turn results in a more competitive advantage of the produced products. In the event of a main change in activities, managers should change their accounting systems with respect to the changes. The main purpose of the ABC system is to provide beneficial information, in terms of cost and profitability about, on the issues of appropriate price, the best combination of products and improving operations by concentrating on the activity generating factors as well as cost-related factors.

### Research Hypotheses

#### Main Hypothesis

Implementing ABC system in the petrochemical companies located in the special economic zone of Imam Khomeini port is probable.

#### Subsidiary Hypotheses

- 1- The amount of production overhead is high in petrochemical companies
- 2- Producing products is a sophisticated process in petrochemical companies
- 3- Petrochemical companies produce various kinds of products
- 4- Petrochemical companies produce different volumes of products
- 5- Petrochemical companies produce various products with different physical sizes
- 6- Sophisticated raw materials are used in petrochemical companies
- 7- Determination of cost storages as well as available cost generating factors in petrochemical companies is probable
- 8- The inventory of finished and semi-finished products at the end of a period is high.

### Research Scope

#### Research Field Scope:

The petrochemical companies located in the special economic petrochemical zone of Imam Khomeini port.

#### Research Time Bound:

The first half of 2012.

### Statistical Population

The statistical population has consisted of all official and contractual employees with a B.S or higher degree in accounting educational field who

work in the finance department of the petrochemical companies of the economic special zones of Boali Sina, Khuzestan, Tondguyan, Fajr and Maroon.

**Statistical Sample:**

Regarding the fact that this research uses qualitative data, those formulations which confirm with qualitative data are used for calculating sample size. Therefore, sample size is determined under the influence of success ratio or p. Since the goal is to maximize the sample size, P is considered 50%.

On this basis, the sample size was 52. Since researcher had predicted a 20% loss of examinations, the sample size raised to 62 persons. Stratified random method was used in the process of people selection in terms of different companies.

$$n = \frac{NZ \frac{\alpha}{2} P(1 - P)}{\epsilon^2 (N - 1) + Z \frac{\alpha}{2} P(1 - P)}$$

**Statistical Analysis Method**

This research uses some descriptive and inferential statistics methods for data analysis purposes. The descriptive statistics covers the issues of compressing data within tables, graph display of data, average and standard deviation (dispersion) numerical indices, percentage and frequency. Since Likert spectrum is an ordinal scale it could not be converted to an interval scale through allocating values from 1 to 5 because the values are considered as codes. Therefore, binomial test (ratio test) is used for hypotheses examination purposes.

**Research Result**

**Main Hypothesis Examination**

$$\left\{ \begin{array}{ll} H_0 : \rho > 0.6 & \text{contrary of claim} \\ H_1 : \rho < 0.6 & \text{claim} \end{array} \right.$$

Claim: Implementation of ABC system in the petrochemical companies located in special economic zone is probable.

**Binomial Test**

	Category	N	Observed Prop.	Test Prop.	Asymp. Sig. (1-tailed)
farasle Group 1	<= 3	0	.0	.6	.000 <sup>a,b</sup>
Group 2	> 3	50	1.0		
Total		50	1.0		

a. Alternative hypothesis states that the proportion of cases in the first group < .6.

b. Based on Z Approximation.

Since the calculated sig for the fourth subsidiary hypothesis is below 5%, the equal assumption i.e. success ratio is rejected by 6%. Since the observed ratio for this hypothesis (0%) is less than test ratio (6%), H<sub>0</sub> is rejected. Since in the reliability level of 95% H<sub>0</sub> is indirectly rejected, the hypothesis of H<sub>1</sub> which is the research claim is verified. Thus, it could be claimed that in a reliability level of 95%, the implementation of ABC system in the petrochemical companies located in the specific economic zone is probable.

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