

A Review on the Strategic functions of Activity-Based Costing Model of Hormozgan Regional Water Corporation

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ABSTRACT

The main purpose of this paper is to investigate the strategic functions of activity-based costing model (ABC) in the management accounting of the Hormozgan Regional Water Corporation. The actual costs and the method used to identify the production costs of the company is done based on the traditional practices, which is incapable of identifying many of the problems and deficiencies existing in the company's performance; besides, it makes it impossible to distinguish the actual costs of the production from unnecessary costs. The results of the establishment and implementation of the company's activity-based costing, indicates that the model has the ability to accurately recognize the production costs. Due to the governmental structure of the company and the similarity of financial process in state-owned enterprises, hopefully, using this method will make significant positive effects on the fiscal discipline of the governmental agencies. Other significant effects of applying this method include access to clear, actual, rational, and documented information. By relying on them and in line with his responsibilities, the management would be able to respond in a timely manner. The more important issue that should be considered by all governmental organizations is to determine the actual cost of the product, which will be possible by simply using this method in an accurate manner, and eliminating the non-value added production cost from the cycle of production function.

KEYWORDS: Activity-based costing model (ABC), strategic functions, productions costs, actual costs

1. INTRODUCTION

Today, due to the increasing demand of people for higher quality services, the authorities are concentrated on some important issues, including the pressures for accountability and transparency in the government's performance, the need to reduce the current costs of the government and the effectiveness of sovereignty, and increasing productivity and performance management. The increasing complexity of the environment, the existence of innumerable variables affecting the decision making process of management, particularly in governmental organizations, and meanwhile calculating the actual costs of the production or product costing through operational budgeting according to the needs and approaches of modern management have increasingly attracted the managers attention [1]. The traditional method of cost accounting which is used in the product costing dates back to the era of the industrial revolution .

In the industrial systems, the overhead cost was first allocated from service units to the manufacturing units and then prorated on the products, based on an equal overhead rate. In the nineteenth century, the ratio of indirect costs (overhead) to direct costs was 20 to 80, therefore this method had a widely usage in the industries. Since, the overhead costs didn't possess a large proportion compared to the direct ones and was prorated in the products with a fixed absorption rate, for example, based on total direct labor (due to the centrality of direct labor), as a result the final cost was almost exactly calculated. However, the competitive atmosphere that prevails in the labor market, and service and support has led to the formation of a wide range of constitutions around manufacturing units, including quality control department, after sale services, relationship with suppliers, handling customer complaints, repair and maintenance, research and development, sales and marketing, etc. The share and centrality of direct labor in production was declined due to the dramatic advances in technology, so that the ratio of indirect costs (overhead) to direct ones was 80 to 20. Thus the manner of computing product cost (goods and services) not only led to the disagreement and misunderstanding between the accountants and auditors, but it also led to the disagreement and misunderstanding between managers and engineers, so that the managers were not able to transfer the problems which had been encountered during their recent decision making to the accountants. The accountants had a costing approach to actual costs while the management had a process approach. The accountants actually considered the cost of materials as the main reason for an increase or decrease in the actual costs, while the managers and engineers attributed it to the process, and this was beyond the accountants' perception [2].

In the year 1988, being sophisticated accountants and active in the field of management, Cooper and Kaplan [3] understanding the perceptual gap between engineers and managers as well as accountants, with the publication of a book called "Relevance lost"2 brought into notice that what makes the cost is neither the production nor the service, it is the "activity". Whether we consider the order of things or the "process" (product or service), we should calculate the total cost effective activities and allocate the overhead costs as separate

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activities with different absorption rates (costliness). Thus, a modern approach was added to the field of management accounting and costs which is entitled “Activity-Based Costing” ABC3 .

Activity-based costing (ABC) is a costing approach that assigns the cost of each activity with resources to different products according to the actual consumption by each product. Instead of addressing the effect, this system analyzes the cause of creating costs and production, and if there is no value-added activity, sets the ground for removal, modification or improvement. This costing system can be also considered as one of the main prerequisite pillars for the measurement of quality control, in order to provide management with better information for a strategic decision making [4].

The government of Iran carries out all its financial activities and programs within the budget law. It can be concluded that, budget is like a full view mirror for the government’s programs and activities, and plays a crucial role in the National Economic Development. With the development of government expenditure and its relationship with economic situation, cost control lost its importance, and the need to improve the systems of planning, control, and management of public sector resources was brought forward to enable the decision makers to have a wider perspective and vast information about the results of performances and costs of operations. On this account, governments took the aspects such as economic, efficiency, and effectiveness of government resources or in other word financial management into careful consideration. Faced this condition not only increased the need to improve the methods and procedures of the existing budgeting to enhance coordination, but also increased new dimensions to the decision-making of management and public financial management. In other words, it put forward the operational and program budgeting system to review and evaluate the management of government operations.

Principle 52 of the Iranian constitution [5] underlines the need to create an appropriate budget, based on accrual accounting, increased efficiency, and transparency in result of the establishment of actual costing system in line with actual activities and also the elimination of ineffective costs of the final product. In this regard, many government organizations have taken this approach in order to get rid of the lack of transparency in costs regardless of a series of constraints, and have used this method at least on an experimental basis, and achieved positive results [6]. The implementation of activity-based costing system in most countries indicates that it has been accepted by these governments. In addition to the advantages such as facilitate competition and justified sales margin, facilitate the process of profit taking, reduce the target cost, elimination of non-value based activities, etc., this system is one of the most modern costing systems which has had a variety of usages for managers in the industrial and service activities [7].

From a holistic view, the activity-based costing method is most used in the U.S.A and western countries, and is used at the stage of development which is one of the stages of product life cycle [8]. In Japan, on the contrary, they use Kaizen costing method at the stage of development instead of activity-based costing, which indicates that this is partly the cause of Japanese continuous improvements [9]. In order to benefit from a complete system of pricing and costing in the product or service design process and introducing it to the market, in addition to activity-based costing method used at the stage of development, they usually use target costing approach. In line with the estimation of future prices of the product in the market during design process, and its introduction to the market, target costing approach has led to the optimization of the costs to meet the customer expectations; it has also taken into consideration the minimum and maximum quality of the products in accordance with the customers’ demands. However, it should be noted that the above mentioned cases have been discussed in terms of the competitive markets not the Iran’s unilateral state economy .

A review on the application of activity-based costing method in western countries revealed that 32% of English companies who have made major changes in their industrial accounting systems have used ABC approach. 14% of Canadian companies have used ABC completely and as an alternative system, and 76% used it as a complement system [10].

On this basis, this study has investigated the strategic functions of activity-based costing system (ABC) of the Hormozgan Regional Water Corporation .

2. MATERIALS AND METHODS

This study is a descriptive survey and its population consists of managers, assistants, experts of the Hormozgan Water Corporation. The library and field methods have been used to collect data. In other words, part of the data required, have been collected from the documents available in the Hormozgan Water Corporation, and the other ones by using questionnaires distributed among managers, assistants and experts of the Hormozgan Water Corporation. Cronbach’s alpha test was used to assess the reliability of the questionnaire, which showed a value of 0.761. Alpha calculation indicates that the questionnaire has an optimal reliability. Given the availability of actual information in 2011, this study has calculated the actual cost of the extracted water per cubic meter for fiscal year 2011.

2.1. Theoretical Principles of Activity-Based Actual Cost Calculation (ABC)

This system is not supposed to be a substitute for the work order costing or stage approach; however, it can be used accompanied by above mentioned systems in the Modern Management Philosophy (meet the customers’ expectations and compete with others). While using (ABC) system is inappropriate for some

companies, it is ineffective for some others. Activity-based costing is appropriate for the companies with following features :

- Companies that have a diverse range of products or provide different services.
- Companies with high overhead costs which cannot be allocated to different products identically due to their different production rate.
- Companies that use automatic machineries in their production.
- Companies with a complicated and abnormal product cycle.

Hierarchy of ABC Method

- Unit-related costs (Resources which are assigned merely to each unit of a product such as energy, depreciation and repairs)
- Product group-related costs (Costs that are performed on a group of products)
- Product support costs
- Supporting facility costs

2.2. The Process of Activity-Based Costing System

To achieve the maximum profit or minimum cost, the activity-based costing system designers should perform the following five steps in system designing:

1. Integration Activities: The number of activities performed in an organization is so great that using a separate drive for each of them is not economically justifiable. Therefore, integration of activities is the first decision in design of an activity-based costing system. The greater the number of integrated activities is, the less ability the activity drive has to properly allocate resource consumption cost to products.

2. Activity Costs Report: Determining the integration of the resources consumed by each activity and which are used in the report is very important. For example, the cost of the resources consumed by activities that have been accomplished for preparation of the production line could be reported separately or by accumulated.

3. Identification of activity centers: Activity center is a part of production process that management is intended to report the costs of activities performed for this unit. The reported cost of the product is not affected by design choices.

4. Selection of resources drivers: The resource cost is first allocated to the cost reservoir of each activity center. Each cost reservoir represents an activity (or activity integration) implemented in the activity center.

Sources drivers used for assigning costs to cost reservoir is allocated to each cost center, then the accuracy of the reported costs is determined. Usually the costs are directly carried to the account of activity cost reservoir in order to avoid distortion.

5. Selection of activity drivers: The selection of an activity driver to a great extent determines the amount of distortion in the product reports. The minimum number of activity drivers used in the activity-based costing system depends on the expected cost and complexity of the product mix.

The type of activity drive used in the process depends on the following three factors: Measuring costs of targeted activity drive, correlation between suggested activity drive and actual activity consumption, and behavioral effects of the suggested activity drive.

2.3. Implementation of Activity-Based Costing System

In this system, the common costs allocation is performed in two stages. In the first stage, the cost of system activities that have led to the creation of products or services is determined. This stage includes:

- a) Production and non-production costs analysis.
- b) Determining the activities related to the production or distribution of products or services.
- c) Determining the number of activity centers in order to collect costs.
- d) Determining the costs associated with each activity.

The second stage is related to the absorption of activity centers cost to products or services separately, which includes:

- a) Determining the production and non-production multiple basis for allocating costs to services.
- b) Dividing the activity centers cost on the basis of various activities and determining the overhead rate.
- c) Overhead absorption rate for different products or services.

2.4. Establishment of Activity-Based Costing System in an Organization

Activity-based costing is the ability to measure the actual resources used by the daily activities of a company. There are two approaches for establishing ABC in each organization including: Experimental approach and phased approach. The experimental approach is performed on a specific organization and provides the basis for testing the concepts and application of ABC.

ABC prototype implementation in the entire organization is often a detrimental advice. Because, its capabilities are not proven yet, its deployment incurs considerable costs, and risk of errors in its design without initial experiment is too high.

A phased approach is recommended only if the complete deployment of ABC is considered as an original scheme. The experimental approach is applied within a specific area, and if the organization has quite different

operations. To prove the feasibility of the scheme in its level of significance, it is necessary to conduct several experimental reviews. After the questions are answered and the original value of the system is appeared, the system is ready to start phased approach.

The main concept of ABC is based on this principle that consumption of resources leads to perform activities and performance of activities in turn leads to the production of goods and services. The advocates of ABC system believe that traditional industrial accounting and management accounting systems not only don't meet managers' expectations but also the lack of adequate accuracy in calculating costs leads them to the wrong direction and wrong decision making.

Measuring unused capacity is a ring deviation between the costs of resources used which have been measured by activity-based costing model and supplied or available resources which have been reported by periodic financial statements of business units.

ABC system traces the costs by tracking activities. Tracking the costs – and allocation of sources cost to activities – empower managers to assess the amount of resources which are necessary, in order to produce goods or provide services.

Based on ABC approach, “Activity” is a process, a task or a function which occurs at a time and has normal results; “Activity center” is a series of activities and tasks performed that together they lead to a valuable output. “Cost driver” is a factor which leads to the creation of costs; “Cost center” or “Cost target” is an axis around which active costs are being used. “Cost reservoir” is a collection of costs that have a single driver, in other words are connected to a hub. On this basis, indirect costs are divided and multiplexed between a few cost centers. Direct costs are the expenses that are easily traced and connected to the output. Otherwise, they will be considered as an indirect cost and part of overhead costs.

2.5. The Components of Actual Costs

Direct materials: Direct materials are the chemicals used in the production.

Direct labor: It means the employees who are directly involved in the production cycle and are divided into two groups. The first group consists of official and contractual personnel who have direct employment relationship with the company. And the second groups are the employments who are employed to do a specific job or as an operator, and this way they make employment relationship with the company. Thus, all the salary costs of two groups are calculated, separated, and considered as direct labor.

2.5.1. Fixed overhead: Fixed overhead is directly related to the building, installation, and machinery used in manufacturing processes, as well as the salary of employees who serve indirectly to the production processes, and which is multiplexed to the actual costs of relevant production processes.

2.5.2. Variable overhead: The variable overhead is prorated to the final products through activity centers and based on cost drivers.

Eight Stages of Activity-Based Costing in Hormozgan Regional Water Corporation

Stage 1: Definition of activity centers and determining the work stations of manufacturing centers: According to the activity type of Hormozgan Regional Water Corporation and its duty towards the type of production produced, the activity centers are defined in three groups including, productive, service, and administrative.

Stage 2: Introduction of goods and final product: At this stage of activity-based actual cost system, considering the type of activity and according to the statute of corporation, we have attempted to define its products including drinking, agricultural and industrial water. The processes during the extraction of water from surface and groundwater sources, and all possible interactions taken place to result in an adequate consumption are also included.

Stage 3: Determining the cost drivers and allocating the indirect costs factors to production centers workstations: The basis of apportionment (determining the drivers) is on the allocation of cost factors from service centers to manufacturing centers, in order to calculate the actual cost of services provided for manufacturing centers.

Stage 4: Determining the relationship between service, administrative and manufacturing centers: Cost centers defined at the first stage are divided and defined in two groups Share receptor and contributor. It should be noted that service cost centers have a bilateral relationship that is they not only play the role of a contributor in the production cost centers but they also play the role of a share receptor in the service centers.

Stage 5: Determining the relationship between cost factors and workstations within manufacturing centers: In the workstations within manufacturing centers, the cost factors associated with the actual cost of the product have been specified (with the assumption of constant costs of creation) in order to determine the relationship between direct and indirect costs.

Stage 6: Allocation of direct and indirect costs to cost centers: In line with the production and the relevant costs defined above; generally, costs are defined in two groups including, direct and indirect costs. Actual data of the direct costs are specifically and directly, without any changes, added to the actual costs. But, indirect costs with an appropriate percent for the contributors services are allocated from service centers to the share receptor production centers in their actual costs, and the rest are transferred to the administrative centers, in order to be classified in the income statement.

Stage 7: Determining the amount of product (water) produced by different centers: At this stage, the amount of water extracted from different production centers are separately obtained by relevant sections, the necessary measures are taken for their classification and reflection in the actual costs, to determine the calculation process of the cost of product.

Stage 8: Calculation of the actual cost of the product separately for each production center: Measures have been taken to identify the actual cost of water produced in each production center by aggregating direct and indirect costs of production in workshops within production centers, and also considering the amount of production in each center.

3. MATERIALS AND METHODS

The aim of this article is to investigate the role of past maturity demands and delayed demands on profitability of bank Mellat Khozestan. For this purpose, basic data of received interest, average of granted loans, paid interest, average of term deposits, total of common income, income obtained from loans, other income, free resources, operational costs, non-operational costs, total of past maturity demands and total of delayed demands in all branches of bank Mellat Khozestan which are totally 80 branches for time period of 2007 to 2010 have been used. Survey methodology is application in respect of goal, and descriptive correlation type in respect of collecting data. In this survey the following linear regression model has been used for evaluating the relationship between past maturity demands and profitability, and for testing the first hypothesis of survey. The dependent variable in this model is profitability of bank Mellat, and the independent variables are past maturity demands, common incomes, other incomes, operational costs, non-operational costs, average of loans. Using logarithm variable instead of variable itself is for the regression model to be better.

$$\text{Profitability}_{it} = \beta_0 + \beta_1 \text{Past Maturity}_{it} + \beta_2 \text{Income}_{it} + \beta_3 \text{Other Income}_{it} + \beta_4 \text{Cost}_{it} + \beta_5 \text{Other Cost}_{it} + \beta_6 \text{Loan}_{it} + e_{it}$$

And for testing second hypothesis, that is investigating the relationship between delayed demands and banks profitability, the following linear regression model has been used. The dependent variable in this model is bank profitability, and independent variables include delayed demands, common incomes, operational costs, non-operational costs, and average of loans.

$$\text{Profitability}_{it} = \beta_0 + \text{Delayed}_{it} + \beta_2 \text{Income}_{it} + \beta_3 \text{Other Income}_{it} + \beta_4 \text{Cost}_{it} + \beta_5 \text{Other Cost}_{it} + \beta_6 \text{Loan}_{it} + e_{it}$$

For calculating bank Mellat profitability, the profitability formula existing in branches of bank Mellat, retrieved from instruction of calculating profitability of branches of bank Mellat, has also been used.

The regression procedure is in a way that the significance of the whole regression model should be firstly tested, and then the significance of individual coefficients of independent variables should be investigated. If Y changes in regression cannot be attributed to X changes, then the existence of linear relationship between X and Y is rejected. The impact ratio of independent variable(s) on dependent variable is measured by coefficient (β); another word provided that the independent variables coefficients) is equal to zero, regression model is not significant (there is no relationship between variables), thus the hypothesis $i=1, 2, 3, n$ should be tested. For testing this hypothesis analysis of variance can be used. This test is performed by using the F-statistic. In these article statistical analyses with Pearson correlation tests of significance, Durbin-Watson test, and F (Fisher) and T tests have been used to investigate regression significance. In this survey the desired error level has been determined 5 percent, which in this case the reliability level would be 95 %. Before performing survey hypotheses test, the tests related to classic assumptions of regression have been performed.

4. RESULTS

4.1. Actual costs in the traditional costing system

Based on the traditional methods, the calculation of the production cost according to the centralized costs in the four centers of production, transmission, conservation, and studies has led to the identification of the traditional actual cost of water. The method of specifying the production cost of Hormozgan Regional Water Corporation has been stated in the following table:

Table 1. Actual Costs in the Traditional Costing System

Centers	Water Production	Water Transmission	Water Conservation	Water Studies	Total-Rls
Salaries and Benefits of Personnel	22.094.786.687	1.671.376.790	9.333.219.063	13.036.508.802	46.135.891.342
Water, Electricity, and Fuels	162.317.705	214.909.301	331.876.000	74.453.920	783.556.935
Repair and Maintenance	1.330.011.048	1.973.213.958	367.000.000	1.030.502.887	4.700.727.893
Telecommunication and Communication	107.706.800	30.884.600	82.858.000	86.492.600	307.942.000
Contractual Services	9.814.284.652	2.895.000.000	430.000.000	925.220.295	14.064.504.947
Depreciation	61.176.497.908	31.390.786.808	928.677.197	797.374.208	94.293.336.193
Other Costs	4.923.128.818	487.000.000	325.000.000	342.000.000	6.077.128.818
Actual Costs	99.608.733.618	38.663.171.466	11.798.630.260	16.292.552.784	166.363.088.128

The amount of water extracted from drinking and agricultural water production centers is separately described in the following table:

Table 2. The Amount of Water Extracted

Position	Minab Dam (drinking)	Minab Dam (agricultural)	Shemil Dam (agricultural)	Jegin Dam (agricultural)	Drinking Wells of Minab	Agricultural Wells of Minab	Drinking Wells of Shemil
Volume of Transmitted Water	52.779.379	57.875.090	3.415.260	23.027.895	8.362.454	16.255.368	1.715.040

Table 3. Type of Extracted Water

Title	Amount- m ³
Drinking water	62.856.873
Agricultural water	108.936.067
Total	171.792.940

According to the raw water tariffs issued by Ministry of Energy the calculated rate for drinking water is 850 Rls, sale price of agricultural water per cubic meter are 90, 160, and 230 Rls.

$$\text{Actual cost of product} = \frac{\text{Total costs of four centers}}{\text{Total volume of transmitted water from production centers}}$$

$$\text{Actual cost of product} = \frac{166.363.088.128}{171.792.940} = 968$$

4.2. ABC Method of Cost Calculation

The purpose of using this method is to identify products cost based on the Company's activities and after defining the activity centers separately such as sources of supply, transmission, distribution and utilization, and determining the proportion of activities divided between production-related cost centers and obtaining their quota from service centers, and observing the order of identification eight stage process and determining the cost drivers; determining the relationship between cost centers and cost factors and allocation of costs, and determining the amount of water produced (drinking and agricultural) and ultimately calculating the product cost per center, and determining the total costs of drinking and agricultural water.

Given that this study is conducted in 1390 based on the Company's actual data, the total cost is calculated by both traditional and modern methods and identification of costs is performed based on identical activities. But, the actual cost of product is calculated by traditional method and based on variable activities. Activity-based actual cost of the total costs of direct materials, direct labor, and overhead absorption is as follow. The separated titles of overhead costs are described in the following tables.

Table 4. Activity-Based Actual Cost

Title	Direct Materials	Direct Labor	Overhead	Total - Rls
Actual costs	2.733.685.425	44.969.554.144	102.910.217.740	150.613.457.309

Table 5. Separation of Overhead Costs Titles

Cost Title	Amount- Rls	Cost Title	Amount- Rls
Water, Electricity and Fuel	411.506.159	Experimental	15.504.145
Repair	3.658.598.423	Office Consumables	84.514.706
Post, Phone, and Internet	85.003.855	Researches	218.720.595
Other Contractual Services	3.714.913.625	Depreciation	94.202.296.624
Expert Fee	16.915.634	Other Expenses	443.223.421
Insurance	59.020.554	Total	102.910.217.740

Distribution of the costs of direct materials, direct labor and overhead absorption rate among each production center which is specified in the headings of the company is displayed in the following table:

Table 6. Distribution of Specified Production Centers

Center Title	Cost Title	Direct Materials	Direct Labor	Overhead	Total - Rls
Minab Dam		-	8.985.464.546	9.983.889.148	18.969.353.694
Jegin Dam		-	3.222.838.459	29.522.731.676	32.745.570.135
Shemil and Nian Dams		-	2.404.744.709	226.689.024	2.631.433.733
Minab Transmission Lines Network		-	7.613.410.298	26.435.824.161	34.049.234.459
Jegin Diversion Dam and Irrigation System		-	2.571.679.525	15.791.570.094	18.363.249.619
Transmission Line and Network of Shemil		-	847.840.884	3.767.262.791	46.151.103.675
Minab Drinking and Agricultural Wells		-	2.153.496.112	5.514.022.627	7.667.518.739
Shemil Drinking Wells		-	1.539.452.994	2.140.050.360	3.679.503.354
Rudan Agricultural Wells		-	3.743.107.791	4.479.601.959	8.222.709.750
Pushan Green Center Channel		-	2.156.516.857	388.306.368	2.544.823.225
Minab Treatment Plant		2.733.685.425	9.731.001.969	4.660.269.532	17.124.956.926
Total - RLS		2.733.685.425	44.969.554.144	102.910.217.740	150.613.457.309

Table 7. Calculation of Actual Costs Per-Production Centers

Center Title	Transmitted Water (m ³)	Amount of Cost- Rls	Actual Costs- Rls
Minab Esteghlal Dam	110.654.469	18.969.353.694	171
Minab Treatment Plant	52.779.379	17.124.956.926	324
Shemil and Nian Dam	3.415.260	2.631.433.733	770
Jegin Dam	23.027.895	32.745.570.135	1.422
Minab Drinking and Agricultural Wells	24.617.822	7.667.518.739	311
Shemil Drinking Wells	1.715.040	3.679.503.354	2.145

4.3. Calculation of Actual Costs Per-Production Centers

$$\text{Actual cost of product (Rls)} = \frac{\text{Total costs of four centers}}{\text{Total volume of transmitted water from production centers}} = \frac{150.613.457.309}{171.792.940} = 877$$

Table 8. Specialized Questions and Answers Percentage

Line	Question					
		Very Low	Low	Medium	High	Very High
Activity-Based Costing System Establish men						
1	Leads to identify the barriers and bottlenecks existing in the public organizations in order to implement operational budgeting		0%	30%	60%	10%
2	Leads to the effectiveness in fiscal principle of the budgeting system	0%	0%	35%	53%	13%
3	Leads to more effectiveness in budget targets as a control tool, financial management tool, planning tool and strategic tool	0%	3%	45%	35%	18%
4	Leads to avoidance of waste and dissipation in budget sources used for non-essential purposes	0%	5%	30%	33%	33%
5	Makes changes in cultural incremental budgeting	0%	5%	35%	38%	20%
6	Helps to have an impact on the performance measurement parameters (unit of work)	5%	8%	28%	50%	10%
7	Leads to possibility of designing performance-based budget	0%	8%	15%	45%	30%
8	Leads to identify the controllable and uncontrollable costs	0%	3%	20%	53%	25%
Operational Activity-Based Costing Process (ABC)						
1	Creating conditions for economic feasibility and technical control	3%	3%	53%	28%	13%
2	Targeted costs and its impact on education and manpower efficiency	0%	10%	33%	50%	8%
3	Identifying the costs and their impact on using qualify and efficient manpower	0%	5%	33%	48%	15%
4	Leads to the transparency in production centers and increasing the managements capability to obtain appropriate credits for production centers	0%	5%	20%	50%	23%
5	Leads to the transparency in production centers and increasing the managements capability to respond promptly and explicitly to the rightful, beneficiary and subset organs	0%	5%	25%	38%	33%
6	Leads to have access to more reasoned and documented information	0%	15%	28%	45%	13%
7	Leads to have impact on monitoring, transparency and investigating the complaints	10%	13%	45%	28%	5%
8	Leads to understandability, reliability and comparability of the information	0%	0%	38%	40%	23%

5. DISCUSSION

Using this research method, that is, the establishment of activity-based costing system on an experimental basis and based on fiscal year 2011 data of the Hormozgan Regional Water Corporation, which was a basis for identification of the actual cost of traditional costing method, indicated a reduction in the actual costs. This issue is indicating that the ineffective and non-productive costs as well as the actual costs are identified in this approach (Table 1).

Costs of the production centers, transmission and distribution networks of drinking and agricultural water, and the ability to identify the exact cost of water in the abovementioned centers in accordance with the amount of water per cubic meter are determined separately, and provide the opportunity for managers to make decisions on credit and cost affairs .

This study has been conducted using a T-test to approve or reject the hypothesis of the research and the SPSS statistical software to analyze the results of the T-test. Given that the comparison has been carried out between the two groups including the informed ones and those who have implemented the ABC method as one group and the respondents as the second group, the results show that there is not a significant difference between these two groups, therefore, the H_0 hypothesis is confirmed .

It should be mentioned that before the survey was conducted, empirically and deterministically and based on real data, the results showed the usefulness of using ABC approach rather than the traditional costing method, cost reduction was also identified. The results provide the opportunity for the management to change the incremental budgeting methods into operational budgeting which is the basis of activity-based costing method. Moreover, elimination of ineffective and non-valued production costs provides the possibility of using excess resources in order to lead them in other sectors, particularly in education and labor productivity.

Transparent, documented, and rational information associated with implementation of activity-based costing method enables the management to provide better opportunities for the company by presenting the information to the relevant agencies (Regulators) and stakeholders (Ministry of Water Resources Management) and also the companies affiliated to the Ministry of Energy, and also the Water Resources Management and particularly the Ministry of Water and Wastewater Companies and ABFAR of the province, approved credits to cover the cost of capture and collection of manufacturing costs.

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