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DETERMINING PERFORMANCE FOCUSED ACTIVITY BASED COSTING (PFABC) AND ITS ROLE IN COST MANAGEMENT AND REDUCTION (AN APPLIED STUDY IN THE GENERAL COMPANY FOR ELECTRICAL INDUSTRIES)

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Abstract:

The research aims to determine performance focused activity based costing in one of the Iraqi industrial companies, the General Company for Electrical Industries, as one of the most important strategic cost management techniques in the field of cost accounting and management accounting in order to help manage and reduce costs, and to achieve the objectives of the research the researcher relied on data The General Company for Electrical Industries through personal interviews with the laboratory staff for the purpose of applying the costing technique on the basis of activities based on performance, The research concluded that this technology helps in eliminating waste and loss in all production processes, as well as processes that do not add value for the purpose of reducing costs.

Introduction:

Global markets have recently witnessed intense competition between economic units and the continuous attempt to reduce the costs of producing their products and provide products that meet the needs of customers and achieve their satisfaction, because traditional accounting and traditional production systems based on the large production system have become unable to provide information that works to determine costs properly. Reducing product costs and improving productivity, so there

was a need to adopt several techniques used by economic units to achieve their goals, including the costing technique based on performance-based activities. In order to determine the actual costs of each activity separate from each other and with high accuracy, as it takes into account the appropriate cost causes and provides them with the necessary flexibility because there are activities that have vectors other than time.

The first topic: Research methodology:

1.1 Research problem:

The problem of the research lies in that the Iraqi economic units suffer from the problem of high costs compared to the foreign products offered in the market, and in spite of that, the Iraqi economic units do not apply modern and contemporary administrative cost techniques despite the development of these techniques distinctly and one of the most important of these techniques is the cost technology on performance focused activity based costing.

1.2 Research Importance:

The importance of the research stems from the importance of the technique of performance focused activity based costing (PFABC) as one of the modern technologies in the contemporary business environment, which helps in reducing costs and improving the quality of products for the purpose of achieving distinguished and superior performance in economic units by providing appropriate and appropriate information.

1.3 Research Objectives:

The research aims to clarify the cognitive pillars of cost technology performance focused activity based costing, and to clarify the cognitive pillars of managing and reducing costs, as well as clarifying the role of cost technology based on performance-based activities in managing and reducing costs.

1.4 Research hypothesis:

The research is based on a basic hypothesis, which is as follows (the use of performance focused activity based costing can help in managing and reducing costs).

2.5 Research sample:

The research sample is represented by the General Company for Electrical Industries for the data for the financial year ending on 12/31/2020.

The second topic: the theoretical framework of the research:

2.1 The concept and importance of the performance focused activity based costing (PFABC) technique:

Performance focused activity based costing is the third generation of ABC technology, as well as the modern and hybrid approach to it that overcomes most of the criticisms that faced the work of the two (ABC-TDABC) techniques. It is an intensive process that includes several steps to allocate indirect costs correctly (Carroil & Lord, 2016: 172).

The technique of determining costs based on performance-based activities is seen as a technique that determines the actual costs of each activity separate from each other and with high accuracy. And a means of performance appraisal (Al-Hamrouni, 2015:675).

Thus, it is a costing technique that combines allocating indirect costs for products and services and accurately measuring the performance of departments, as well as being one of the important and effective tools in making strategic decisions, and raising the level of efficiency and productivity through reducing costs and optimizing the use of resources (Al-Waeli, 50: 2020).

The importance of the performance-based activities-based costing technique (PFABC) comes from a number of points and points as follows: (Al-Shibli, 56:2017), (Al-Hamrouni, 79-80:2015), (Tiwari, et.al., 2020). :74-75(

1. You determine the actual costs of each activity separately and with high accuracy, taking into account the appropriate resource and cost driver, which does not have to be time.
2. Determining the supplier's cost behavior with sufficient accuracy and this feature is positively reflected on the process of determining costs for each activity.
3. It is considered one of the best planning and measurement tools for performance that can be relied upon, such as management in delivery and identification of efficiency deviation, volume deviation, and others.
4. You can bypass the grade points in the two techniques (TDABC, ABC) by identifying clear and important activities, as well as mapping resource costs related to the activities.

The researcher agrees with these concepts and views it as one of the strategic management cost techniques that emerged as a result of the criticisms of the two techniques ABC) - (TDABC and came to address their shortcomings to provide more accurate and appropriate information for economic units through which they can perform their work and reduce the cost of production while maintaining quality Thus, increasing profitability.

2.2Steps of applying performance focused activity based costing:

For the purpose of applying the (PFABC) technique, a set of steps is required, and these steps can be clarified through the following:

1. Defining the main activities: The work of the (PF.ABC) technique in this step is similar to the work of the (ABC) technique in the first step, but this step was ignored in the (TD-ABC) technique, and this step is necessary for two reasons (Sanad, (61). :2012:
 - a. The behavior and nature of costs differ from one activity to another within the economic unit and even within the same department.
 - b. The main component of the activity-based costing system is the identification of activities
2. Determining the actual materials used for each activity: Determining the actual resources in (PF.ABC) is done in a different way, as the workers, when performing a specific activity, are able to determine the quality and quantity of the actual resources that are used in the activities, based on their behavior or according to the information systems in The economic unit (Mujbil,47:2020).

3. Determining the actual rate of the resource of each activity: The determination of the actual rate of activities in the activity-based costing (ABC) technique is through the percentage of employees' time spent in each activity, either in the time-oriented activity-based costing technique (TD.ABC) is determined Average costs for equitable energy per administration by dividing total energy costs supplied by process resource energy consumed based on resource time, (Saroklaei et al.2013: 347-348)
4. Determining the cost of each activity: In this step, the costs of each activity are determined, taking into account the behavior of resource costs. When the cost of the resource is variable, this means that the resource is flexible. Therefore, the cost factor is determined by the product of the actual resource that is obtained from each activity (Ari) in the actual price of the resource that is consumed (APi), as there are flexible materials such as direct labor hours, direct materials and indirect industrial expenses where there is no need to track the allocation of these costs to activities because with the behavior of variable cost they are characterized as flexible resources (Namazi, 2009: 37) .
5. Calculating the standard rate of activity: This step is considered important for the implementation of the third generation technology (PF.ABC), as there is no such step in the (ABC) and (TD.ABC) technologies. When implementing this step, the standard rate of all activities should be estimated and this is done Estimation according to "internal and external indicators, work measurement technique and other means necessary to estimate the standard rate (Hatef & Al-Shibli,2018:9).
6. Calculation of activity price deviation: The price deviation for each activity is determined by the cost management by calculating the actual resource quantity that is reached in each activity and multiplying it by the resource and consumer price, and subtracted from the actual cost of the activity in order to obtain a price deviation for flexible resources As for the mandatory resources, where their quantity remains fixed and does not change (Al-Hamrouni,2016: 436).
7. Calculating the costs of the applied activities: The implementation of this step is somewhat similar to its application in the (TD.ABC) technique, while the (PF.ABC) technique takes into account the behavior of the consumed resources, whether they are flexible or mandatory resources. When we calculate the elastic or obligatory resources When performing a specific activity (Al-Hamrouni, 2015: 77).
8. Calculation of the quantity deviation: This deviation measures the performance of production managers, where the deviation of the quantity indicates that the production manager has used more than the standard quantity necessary for the actual production of a particular service or product. The deviation of the activity quantity for flexible resources is determined by multiplying the amount of actual resources needed for the activity. In the standard resource price consumed from it, then from the multiplication result, the incurred cost of the activity is subtracted (Shaheen, 2018: 124).
9. Calculating the productivity of each activity: The process of evaluating the performance of the administration depends on the productivity of the activity, which can be considered as an important information in the evaluation process in the economic unit, which is not found in the

techniques (ABC, TD-ABC) and is considered a more vital step in the technique (PF.ABC). (Guzman, et.al., 2014: 161) .

2.3 The relationship between PFABC technology, management and cost reduction:

The issue of cost reduction is one of the important issues that has captured the attention of management, and that the aim of this concern is to make the costs of operations, products and services that are provided by the economic unit to customers at their lowest level, so the economic units must focus and strive to control their costs and work to reduce them while maintaining quality and performance As well as spreading the culture of cost reduction at all administrative levels of economic units (Knoedler & Delotto, 2014: 57).

The focus of the cost-reduction philosophy is mainly on achieving an optimal use of available resources, which leads to reducing waste, waste and misuse so that the direction of costs is on important activities that add value, taking into account the issue of achieving the desires and satisfaction of customers through the products that are offered with high quality. High specifications and competitive prices (Carroll & Lord, 2016: 173).

The importance of the technique of determining costs based on performance-based activities in managing and reducing costs comes through the following: (Al-Saharawi, 2013: 45), (Monroy, 2019: 2).

1. The technique of determining costs based on activities based on performance works to reduce costs in a way that enables economic units to achieve great advantages that enable them to carry out their business continuously through the correct use of the elements and components of the product.
2. The real reduction of costs through the technique of determining costs on the basis of performance-based activities should be accompanied by an improvement in the functional entitlement of the product and thus an improvement in the value of the product from the viewpoints of the economic unit and the customer.
3. The importance of reducing costs through the technique of determining costs on the basis of activities based on performance comes through the relationship between cost and the level of profits achieved, as the lower the cost leads to increased profits and improved profitability indicators.
4. Reducing costs through the technique of determining costs on the basis of performance-based activities helps employees to perform their work in the correct and appropriate manner, by providing them with incentive rewards through the abundance that is achieved.
5. Reducing costs through the technique of determining costs on the basis of performance-based activities will lead to an increase in the profits of economic units and an increase in their capital, thus expanding the work and plans of future economic units and creating new horizons for society and the economy
6. Reducing costs through the technology of determining costs based on performance-based activities in the economy contributes to the use of production factors because it is considered the most appropriate way to achieve efficiency and productivity in economic units.

When reducing costs through the technique of determining costs on the basis of performance-based activities, a set of conditions should be taken into account, which are as follows: (Namazi, 2009:38)

1. The condition of continuity: the reduction of costs occurs as long as the economic unit continues to carry out its business, ie, it has the character of continuity.
2. The condition of improvement and development: by determining the loss and loss in economic units as a result of reducing costs, it leads to improved productivity and efficiency in performance.
3. The condition of maintaining quality: The process of reducing costs should not affect the necessary components and characteristics of the product and reduce its use benefit.

Based on what was mentioned above, we can say that through the technique of determining costs based on performance-based activities, it contributes to managing and reducing costs in order to continue and survive due to the intense competition that economic units are going through, whether on the local or external side, as well as seeking to expand in the business environment. Increasing profitability indicators or at least maintaining the current position in light of the accelerating world of competition.

The third chapter: the practical aspect of the research:

3.1 An introduction to the General Company for Electrical Industries:

The General Company for Electrical Industries was established in 1998, and it is one of the companies affiliated with the Iraqi Ministry of Industry and Minerals. The company aims to contribute to supporting the national economy in the field of producing household and industrial electrical appliances and equipment in accordance with the approved specifications and to achieve the objectives of development plans. The company produces electrical appliances, household and industrial equipment and their accessories. Whole or partly, producing lighting installation materials of all kinds, as well as electric lamps, and providing support and advisory services related to its activities to various state departments and the mixed and private sectors, The company also works on developing and expanding existing factories and production lines, establishing projects and complementary and new lines, purchasing and importing production requirements and any materials included in its production or needs, as well as marketing its production for local or export purposes. And registering them in its name in the competent departments, selling, mortgaging, renting and leasing them, conducting all legal actions in their regard, conducting all transactions and concluding contracts that it deems necessary, and constructing buildings, warehouses and various facilities to achieve their purposes.

3.2 Determining costs based on performance-based activities in the General Company for Electrical Industries for the purposes of managing and reducing costs:

For the purpose of applying (PFABC) technology in the General Company for Electrical Industries, it is required to identify the main activities in order to determine that the behavior and nature of costs differ from one activity to another within the economic unit and even within the same department, and then the actual materials used for each activity are determined, then determine Actual resource rate for each activity which is by the percentage of employee time spent on each activity, Then the cost of each activity is determined, and then the standard rate of the activity is calculated, as the standard rate of all

activities should be estimated, and this estimate is made according to "internal and external indicators, work measurement technique and other means necessary to estimate the standard rate, then the price deviation for each activity is determined by the management Costs by calculating the actual resource quantity that is reached in each activity and multiplying it by the resource and consumer price and subtracting from the actual cost of the activity in order to obtain a price deviation for flexible resources. As for mandatory resources, their quantity remains fixed and does not change, Then calculate each of the costs of the applied activities and the deviation of the quantity, and finally calculate the productivity of each activity, which can be considered an important information in the evaluation process in the research sample company, and the actual costs of the General Company for Electrical Industries during the year 2020 can be clarified as follows:

Table (1): Actual costs of the General Company for Electrical Industries during the year 2020

Account Name	Total Amount (Thousand Dinars)
salaries and wages (31)	697815668
Raw materials and raw materials (321)	1080217360
Fuels and Oils (322)	123877758
Spare Tools (323)	98025020
Packaging (324)	2537160
Miscellaneous (325)	13597313
Personnel equipment (326)	5108000
Water and Electricity (327)	138240691
Maintenance Services (331)	10568000
Research and Consulting Services (332)	7428000
Advertising, Printing and etc. (333)	1524000
Transportation, Delegations (334)	32708000
Fixed Asset Lease (335)	625000
Miscellaneous Service Expenses (336)	26747750
Extinction (37)	79600750
total	2318620470

Source: Prepared by the researcher based on the data available in the company.

It is clear from the above table that the total actual costs of the company during the year was (23,18620,470) dinars, and in light of the problems and obstacles faced by the General Company for Electrical Industries above, there is a possibility to use the costing technology based on performance-based activities in reducing costs to keep pace with the developments facing the company.

After determining the actual costs of the factory, they will be distributed to the main and auxiliary activities, and the indirect industrial costs can be distributed to the activities in the General Company for Electrical Industries during the year 2020, as shown in the following table:

Table (2): Distribution of indirect industrial costs to activities in the General Company for Electrical Industries during the year 2020

Costs	Distribution basis	Main Activities (Thousand Dinars)				Total (thousand dinars)
		Preparation	Preform	Construction	Installation	
Raw materials and raw materials	Productive departments benefit from the Industrial Services Department	32406521	162032604	21604347	864173888	1080217360
fuels and oils	Productive departments benefit from the Industrial Services Department	3716333	18581664	2477555	99102206	123877758
water	Productive departments benefit from the Industrial Services Department	79368	396840	52912	2116480	2645600
electricity	Equipment horsepower	4067852	20339264	2711902	1084760734	1111879752
Total (thousand dinars)		40270074	201350372	26846716	2050153308	2318620470

Source: Prepared by the researcher based on the data available in the company.

It is evident from the above table that the cost of the activities of each of the preparation, formation, construction and installation activities were (40270074), (201350372), (26846716), (2050153308) thousand dinars, respectively. (2318620470) thousand dinars, and through personal interviews by the researcher with the company's employees, the research sample was distributed over the indirect costs to the auxiliary activities and according to the percentages of benefit from each of the company's activities, where the preparation department amounted to about 3%, while the formation department amounted to 15% , while the percentage of the construction department was 2%, while the installation activity was 80%, Noting that fuel and oils are distributed to the activities learned from this section of industrial services, which is the only section that uses fuel. As for the distribution of indirect industrial costs to the auxiliary activities in the General Company for Electrical Industries during the year 2020,

it can be clarified as shown in the following table:

Table (3): Distribution of indirect industrial costs to auxiliary activities in the General Company for Electrical Industries during the year 2020

Costs	Auxiliary Activities (Thousand Dinars)				Total (thousand dinars)
	Maintenance	Marketing Services	Administrative	Services Warehouses	
backup tools	98025020				98025020
Packing materials		2537160			2537160
Miscellaneous	153240	766200	102160	4086400	5108000
Staff equipment			5108000		5108000
maintenance	10568000				10568000
Research and consulting services			7428000		7428000
Printing, hospitality and publishing			1524000		1524000
Transfer, dispatch			625000		625000
transfer expenses			26747750		26747750
Depreciation of fixed assets			79600750		79600750
Total (thousand dinars)	108746260	3303360	121135660	4086400	237271680

Source: Prepared by the researcher based on the data available in the company.

It is evident from the above table that the costs of the activities of each of the maintenance, marketing services, administrative services and warehouses were (108746260), (3303360), (121135660), (4086400) dinars, respectively. The rise in wages is due to the presence of a large number of employees and workers in the company, as it suffers from a large functional slack, and this is reflected in the high cost of the product and the impact on the process of differentiation and choosing the right decision, which may cause the factory to weaken competitiveness, and the number of workers and the time of activity for each production activity can be clarified factory, as shown in the following table:

Table (4): The number of employees and the time of activity for each of the production activities of the factory

No.	Production Activities	Manufacturing time/minute	working day/hour	No. of workers
1	Preparation	85	8	35
2	formation	55	8	58
3	Building	60	8	100
4	installation	90	8	67
5	Quality and Inspection	85	8	31
Total		375 minute	40 hour	291

Source: Prepared by the researcher based on the data available in the company.

The percentage of surplus capacity was determined according to the opinion of the factory manager (35%) to meet the unplanned and defective stops, the absence of workers, the delay in the preparation of materials and the holidays of the machines, noting that the amount of production achieved (3134) products per year is equal to (14) products per day, as the time available represents one day (24) hours minus the times of stops, and these stops are either sudden or periodic, i.e. planned, and since the working day is (8 hours per day x 60 minutes per hour = 480 minutes), it is according to the following: (Production time available for each meal = 480 minutes - 120 minutes = 360 minutes), as the sudden or planned stops, according to the factory manager's opinion, are 2 hours (2 hours x 60 minutes = 120), which can be explained as follows:

Number of workers required in each activity = (achieved production quantity x cycle time)/((excess energy - 1) available time(

Number of workers required in the preparation activity = (14 x 85)/((1-35 %) 360) = 6 workers

The number of workers required in the formation activity = (14 x 55)/((35%-1) 360) = 3 workers

Number of workers required in construction activity = (14 x 60)/((390-15%) = = 4 workers

Number of workers required in the installation activity = (14 x 90)/((390-15%) = 5 workers

Number of workers required in the inspection activity = (14 x 85)/((390-15%) = 6 workers

The above results show us that each production activity needs a small number of workers to accomplish what the factory needs according to the planned production, and also the factory has a very large surplus of workers and the following table shows the current number of workers and the number of workers according to the cost technology on the basis of Performance-based activities:

Table (5): The number of redundant workers according to (PFABC) technique

No.	Production Activities	Current number	Activities based on Performance	Difference
1	Preparation	35	6	29
2	Formation	58	3	55
3	Building	100	4	96
4	Installation	67	5	62
5	Quality and Inspection	31	6	25
Total		291	24	267

Source: Prepared by the researcher based on the data available in the company.

According to the results in the above, it turns out that there are a large number of surplus operators in each production activity, as this surplus saves a lot of costs, which leads to a reduction in costs, salaries, wages, staff equipment, transportation costs and various service costs. Activity-based, performance-based costing can help manage and reduce costs by reducing unnecessary and unjustified expenditure resources.

Fourth topic: conclusions and recommendations:

4.1 Conclusions:

1. The (PFABC) technique is a technique that determines the actual costs of each activity separate from each other with high accuracy and takes into account the appropriate cost causes and provides them with the necessary flexibility and is a means of performance evaluation.
2. The objective of the (PFABC) technology is to eliminate waste and waste in all production processes, as well as processes that do not add value for the purpose of reducing costs in a manner consistent with the requirements of the industrial environment.
3. PFABC technology helps to achieve significant cost savings, in order to reduce waste and waste that occur in all different production processes.
4. The decrease in the production capacity utilization rate and the high production costs in the General Company for Electrical Industries due to the increase in the number of workers, which led to an increase in costs, especially wages, salaries and other costs.
5. This (PFABC) technique helps in eliminating waste and loss in all production processes, as well as processes that do not add value for the purpose of reducing costs, and the research ended up thinking about switching to modern systems and technologies due to the multiplicity of customers' needs and desires and the change in benefits and forms of products.

4.2 Recommendations:

1. The necessity of transforming the Iraqi industrial units into modern systems and technologies due to the multiplicity of needs and desires of customers and the change in the benefits and forms of products.
2. The necessity for the Iraqi industrial units management to be interested in obtaining everything that is new and developed and making the necessary adjustments to the product for the purpose of producing high quality products at low costs capable of competing with imported products.
3. Developing the current costing system for Iraqi industrial units by providing the components of an integrated cost accounting system.
4. The necessity of getting rid of activities that do not add value in order to get rid of the unnecessary costs associated with them.
5. Applying the costing technique based on performance-based activities in order to help manage and reduce costs.

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