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THE ROLE OF RESOURCE CONSUMPTION ACCOUNTING TECHNOLOGY IN CONTROLLING COSTS AND UTILIZING AVAILABLE RESOURCES (AN APPLIED STUDY IN AL FIDA PUBLIC COMPANY)

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Abstract:

The research aims to demonstrate the role that resource consumption accounting technology can play in controlling costs and utilizing available resources, as well as helping to accurately determine the cost of the product to help reduce unjustified costs. The research community is represented by the Iraqi industrial companies, while the research sample is represented by the Al-Fida Public Company for the data of the year 2021. The research reached a set of conclusions, the most important of which was that the resource consumption accounting technique can help control costs and the exploitation of available resources by achieving self-monitoring of activities by going down in the cost analysis processes to the partial level, which is the level of resources and not on the basis of the macro level of the economic unit as a whole, and this helps in rationalizing the consumption of resources and controlling idle energy.

Keywords:

INTRODUCTION

The contemporary business environment is currently witnessing various developments, most notably the emergence of intense competition between economic units, globalization, the short life cycle of products, and others. In the face of all these developments, it was natural for the economic units to consider reconsidering the traditional accounting systems in order to increase the criticisms leveled at them due to their neglect of market considerations and the developments that took place in it. And search for technologies that respond to these developments and manage costs by reducing them in a way that leads to producing products at the lowest costs that achieve a competitive advantage in the market. The technique of accounting for resource consumption is one of the modern techniques of management accounting that works on the optimal utilization of the resources of economic units, which leads to a reduction in the cost of the product, and thus the reflection of this in achieving the competitive advantage of these units.

THE FIRST TOPIC: RESEARCH METHODOLOGY AND PREVIOUS STUDIES

1-1 Research problem:

The rapid developments that the economic units are witnessing in light of the modern business environment and the intense competition that resulted from it, it was obvious that the economic units should think about finding modern accounting techniques that meet the new requirements and contribute effectively to reducing costs, which is the most important in achieving the competitive advantage of the unit, which Traditional systems are no longer able to achieve them, and among the most important of these techniques is the resource consumption accounting technique. Hence, the problem that can be framed in this research revolves around the following question: Does the application of resource consumption accounting technique contribute to cost control and the exploitation of available resources? .

1-2 Research importance:

The importance of the research is evident from the importance of the role played by the resource consumption accounting technique in controlling costs and the exploitation of available resources. surrounding business environment.

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1-3 Research objectives:

The research aims to demonstrate the role that resource consumption accounting technology can play in controlling costs and utilizing available resources, as well as helping to accurately determine the cost of the product to help reduce unjustified costs.

1-5 Research hypothesis:

The research is based on a basic hypothesis as follows: The resource consumption accounting technique can help control costs and the exploitation of available resources.

1-5 Research community and sample:

The research community is represented by the Iraqi industrial companies, while the research sample is represented by the Al-Fida Public Company for the data of the year 2021.

THE SECOND TOPIC: THE THEORETICAL SIDE OF THE RESEARCH

2-1 The concept of resource consumption accounting technology:

The resource consumption accounting technique is seen as one of the techniques that provides detailed accounting information on marginal costs that supports administrative practices in its management of resources in relation to related activities. It responds to environmental developments and manages and reduces costs in a way that leads to producing products with the lowest costs achieved. Competitive advantage in the market better than competitors (Kathy, 2016:67).

The resource consumption accounting technology is considered one of the modern costing techniques that provide more appropriate and detailed information about the activities related to the product and in a way that helps in decision-making. German costs that focus on resources and the American cost management system that focuses on activities and in a way that supports decision-making processes in the economic unit (Elmaci, 2014: 4-5).

Resource consumption accounting is defined as an integrated dynamic system that has the ability to adapt to environmental variables in relationships based on what is consumed of resources and in a way that helps to overcome activity-based costing (ABC) problems concerned with resource consumption and cost behavior (Altai, 2011:3).

2-2 The objectives of the resource consumption accounting technique:

The main objective that companies seek to adopt the application of resource consumption accounting technology is the optimal utilization of the resources of the economic unit in order to reduce production costs, achieve customer requirements, and support the competitive position of the economic unit. Among the different goals mentioned by the accounting literature regarding the resource consumption accounting technique are the following: Blocher, et al., 2010:152)) (Sorour and Ali, 2017: 40) (Query, 2017:244)

1. Providing more accurate information in calculating costs by increasing the number of cost centers, which gives a greater opportunity in tracking resources to different cost goals.
2. Assisting managers in predicting resource consumption factors and expected input prices to help make the best use of resources.
3. Providing real data on the cost because its determination is based on theoretical energy and not practical energy.
4. Providing performance measures that are more appropriate and fair, and are a link between cost management systems and project resource planning systems.
5. The application of this technology contributes to solving many difficulties related to defining cost behavior, tracking it and linking it to various decision-making processes.
6. Linking resource pools and those responsible for them, which contribute to providing information that helps in evaluating the performance of the various activity centers in a way that can help improve the performance of the departments and activities in the economic unit.
7. Consistency in its application with the target costing technique by targeting cost reduction in the product planning stage by excluding unused resources related to excess or idle energy while rationalizing the energy used.

2-3 Principles of Resource Consumption Accounting Technique:

There are three basic principles that are relied upon when applying the resource consumption accounting technique, which are as follows: (Ahmed & Moosa, 2011: 791), (Al-Rubaie, 2016: 54)

1. The principle of causality: In light of the application of the resource consumption accounting technique, the focus of this technique is the resources and not the activities as in (ABC). It reflects the cause and effect relationship in determining the cost related to it, and causation means finding the relationship between resources and activities and then between activities and the product. As a result, on the basis of this relationship, the share of each activity in the cost of resources and the share of each product in the cost of activities are determined.

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2. The principle of response: the application of this principle achieves the guarantee of response or compliance with the principle of causality, as the response is considered as a complement and an explanation for causation, as it governs the relationship of variable and fixed costs and their management in each resource pool, as well as its role in controlling the amount of resources that are consumed and activities Which is related to the production of the product, the principle of response allows for improvement decisions at all unit levels and supports planning and cost forecasting.
3. Principle of work: This principle stems from understanding the vision and strategy of the economic unit and its competitive position, on the basis of which the flow of resources takes place through the activities that are implemented in order to reach the final cost goals, as well as identifying the activities that consume resources within the cost complexes periodically or continuously with specifying the inputs The resources needed by each activity and its reflection in the result in assisting the administration in determining the rate of use of resources and idle energy, in the light of which decisions related to cost management are taken effectively and efficiently.

2-4 Controlling costs and utilizing available resources using RCA technology:

According to the resource consumption accounting technique, the presentation of the cost according to its nature is according to the following division of its elements:

1. According to the time period: it is divided into the following: (Gentoo, 2012:30)
   a. Mandatory energy costs: These are the costs that are determined when setting up the structure for operations and activities related to the characteristics of the product throughout its life cycle. This type of cost represents the minimum cost that the economic unit must bear even if no product is produced.
   b. Operating and energy management costs: These are the elements of the costs necessary to operate the various activities and achieve productivity as well as achieving the value of the product.
2. According to its relationship to the cost complex: it is divided into the following: (Aksu, 2013:2)
   a. Direct costs are the costs that arise within the cost resource pool itself, and those responsible for the pool have control and control over it.
   b. Indirect costs: They are the costs that are charged to a collector, the cost of resources in return for benefiting from other cost accumulators. Thus, management control over this type of cost is limited by the amount of resources consumed by the cost complex from the rest of the other complexes.
3. According to the nature of the cost: it is divided into the following: (El-Helbawy, 2016:28)
   a. Variable costs: are the costs that arise when the quantity of inputs consumed varies with the level of output, i.e. costs change with production levels.
   b. Fixed costs: The nature of this type of cost arises when the amount of inputs consumed does not vary with the level of output or different cost targets, i.e. consumption is constant.

The application of resource accounting technology achieves many advantages, including tracking resource paths and costs related to them in detail, which helps to allocate them appropriately to production processes, as well as a good understanding by management of the interrelationships between resources, which supports the decision-making process, in addition to the possibility of determining idle capacity And the costs associated with it, which enables the administration to properly direct that energy and exploit it or take the appropriate decision regarding it to serve the objectives of the economic unit (Al-Saghir, 2011: 88).

RCA technology also assists in the proper management of invested resources and directing them towards activities that achieve value for the customer and the economic unit and eliminating waste by improving the performance of activities related to the product, and providing the necessary information for planning the operations of the economic unit, whether at the strategic, tactical or operational level (cavity, 2013:27).

In addition to helping to achieve self-monitoring of activities by going down in cost analysis processes to the partial level, which is the level of resources and not on the basis of the macro level of the economic unit as a whole. This helps in rationalizing resource consumption and controlling idle energy (Al-Hussein, 2016: 41).

The technique of accounting for resource consumption is one of the techniques that is characterized by dynamism, comprehensiveness, and integration that aims to manage costs. In terms of dynamism, it reflects the changes that occur in the environment while trying to adapt to it. As for its comprehensiveness, this is due to its focus on resources and an attempt to deal with them according to logic. Activity-based costing and project resource planning system, and its ability to integrate with any cost management technology to support competitive advantage or cost reduction (Sorour and Ali, 2017: 39)

THE THIRD TOPIC: THE APPLIED SIDE OF THE RESEARCH

3-1 An introductory brief about Al-Fida General Company:

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Al-Fida General Company was established in 1993. It is specialized in manufacturing two types of products, namely dampers and pistons. Dampers are hydraulic shock rings that are used in cars. As for pistons, they are special equipment for transport vehicles and machinery for cement factories. The factory produces high-quality products that can meet the needs of Therefore, the factory obtained the ISO 9002 certificate in 2002, and there are four stages of production, which are machining, assembly, painting and packaging. Where the inner and outer cylinder is cut, then the cylinder is filtered from impurities, polished from the inside, washed with water, dried, then coated with a chemical substance to prevent it from rusting, then the cylinder is washed with a basic solution in order to get rid of the impurities, dust and fatty materials suspended in it, then the raw materials are added With cranks, steering, springs, nuts, pastes, and markers, after that the parts and materials that were collected inside the cylinder in the previous stage are washed by using a basic solution to get rid of any impurities or dust in these parts and materials. Finally, the product is wrapped in special cartons (set), which are placed on These cartons are guiding leaflets in order to alert the customer to further instructions and recommendations when using.

3-2 Applying the resource consumption accounting technique in the Al-Fida Public Company to control costs and the exploitation of available resources:

In order to apply the resource consumption accounting technique in the Al-Fida Public Company, it is necessary to determine the productive and non-productive resources and their costs. The productive resources in the Al-Fida Public Company during the year 2021 can be clarified through the following table:

Table (1): Production resources in Al-Fida State Company during the year 2021

No.	Resources	Variable costs	Fixed costs	Total costs
1	Machine operating	8400250	6812650	15212900
2	Assembling	6524805	3422755	9947560
3	Paint	6200125	2614665	8814790
4	Cartage	3415200	1811700	5226900
	Total	24540380	14661770	39202150

Source: Prepared by the researcher based on company data.

It is clear from the above table that there are four productive resources in the company, namely operating machines, assembling, painting, and packaging. The fixed resources for these resources are (6,812,650), (3,422,755), (2,614,665), (1,811,700) dinars, respectively, and thus the total costs of these resources were (15,212,900), (9,947,560), (8,814,790), (5,226,900) dinars, respectively.

The service resources of the Al-Fida Public Company during the year 2021 can be clarified through the following table:

Table (2): Service resources in Al-Fida Public Company during the year 2021

No.	Resources	Variable costs	Fixed costs	Total costs
1	Research and development	7466814	6055628	13522442
2	Quality control	5799769	3042418	8842187
3	Maintenances	5511167	2324123	7835290
4	Marketing services	3035703	1610384	4646087
5	General services	1523000	1100200	2623200
6	Management	4655750	2617800	7273550
	Total	27992203	16750553	44742756

Source: Prepared by the researcher based on company data.

It is clear from the above table that there are six service resources in the company, which are research and development, quality control, maintenance, marketing services, general services, and management. The variable costs of these resources amounted to (7466814), (5799769), (5511167), (3035703) , (1,523,000) and (4,655,750) dinars, respectively, and the fixed costs for these amounted to (6,055,628), (3,042,418), (2,324,123), (1,610,384), (1,100,200) and (2,617,800) dinars, respectively. Thus, the total costs of these resources It was in the amount of (13,522,442), (8,842,187), (7,835,290), (4,646,087), (2,623,200) and (7,273,550) dinars, respectively. It is clear that the consumption of resources does not depend on the role of activity in consuming them, but rather requires defining the reciprocal or interdependent relationships between the resources allocated to a specific cost complex and resources belonging to other resource cost complexes. This would help in providing detailed information about all the interrelationships that can arise between resources This type of relationship is a function of the resources used, which would affect the nature and behavior of the cost.

Exploited and unexploited energy costs in the Al-Fida Public Company during the year 2021 can be clarified through the following table:

Table (3): Exploited and unexploited energy costs in Al-Fida Public Company during the year 2021

No.	Resources	Cost of used	Cost of	Total cost of

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		capacity	reassigned capacity	capacity
1	Machine operating	5109487.5	1703162.5	6812650
2	Assembling	2567066.25	855688.75	3422755
3	Paint	1960998.75	653666.25	2614665
4	Cartage	1358775	452925	1811700
5	Research and development	4541721	1513907	6055628
6	Quality control	2281813.5	760604.5	3042418
7	Maintenances	1743092.25	581030.75	2324123
8	Marketing services	1207788	402596	1610384
9	General services	825150	275050	1100200
10	Management	1963350	654450	2617800
	Total	23559242	7853081	31412323

Source: Prepared by the researcher based on company data.

It is noted from the above table that the energy cost used for each resource of operating the machines, assembly, painting, packaging, research and development, quality control, maintenance, marketing services, general services, and administration, which were (5109487.5), (2567066.25), (1960998.75) , (1358775), (4541721), (2281813.5), (1743092.25), (1207788), (825150), (1963350) dinars, respectively, and the cost of unused energy in the company amounted to (1703162.5), (855688.75), (653666.25).), (452925), (1513907), (760604.5), (581030.75), (402596), (275050), (654450) dinars, respectively, and thus the total energy cost in the company was (6812650), (3422755), (3422755). 2614665), (1811700), (6055628), (3042418), (2324123), (1610384), (1100200), (2617800) dinars, respectively. Reliance has been made on the cost vector, which reflects the main reason for the emergence of any element of the cost elements within each of the cost complexes. Thus, it is considered the factor that affects the cost, whether by increasing or decreasing it, as each of the cost complexes, whether related to resources or activities, has a directive. A cost for each of them, where the cost vector is used to distribute costs within the resource pool to the activities of the various production processes in a way that reflects the extent of consumption of each activity of those resources, such as the individual resource cost pool that uses direct work hours as a measure of its outputs, while its resource cost vector is a cost One hour in order to help distinguish between exploited and unexploited energy and accurately determine the costs of each.

The amount of the reduction in the costs of the Al-Fida Public Company during the year 2021 can be clarified through the following table:

Table (4): The amount of the reduction in the costs of the Al-Fida Public Company during the year 2021

No.	Resources	Cost before RCA	Cost of after RCA	Reduction in costs
1	Machine operating	15212900	14361318.75	851581.25
2	Assembling	9947560	9519715.625	427844.375
3	Paint	8814790	8487956.875	326833.125
4	Cartage	5226900	5000437.5	226462.5
5	Research and development	13522442	12765488.5	756953.5
6	Quality control	8842187	8461884.75	380302.25
7	Maintenances	7835290	7544774.625	290515.375
8	Marketing services	4646087	4444789	201298
9	General services	2623200	2485675	137525
10	Management	7273550	6946325	327225
	Total	83944906	80018366	3926540

Source: Prepared by the researcher based on company data.

It is clear from the above table that the cost of each resource of operating the machines, assembly, painting, packaging, research and development, quality control, maintenance, marketing services, general services, and administration, before applying the resource consumption accounting technique in the research sample company, which was (15212900) , (9947560), (8814790), (5226900), (13522442), (8842187), (7835290), (4646087), (2623200), (7273550) dinars, respectively. The cost of resources, whether productive resources or non-productive resources, which are resources employed to serve productive resources after applying the resource consumption accounting technique in the Al-Fida Public Company under study during the year 2021 in question, amounted to (14361318.75), (9519715.625), (8487956.8), (8487956.8), (5000437.5), (12765488.5), (8461884), (7544774.625), (4444789), (2485675), (6946325) dinars, respectively, and thus the total cost reduction is (851581.25),

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(427844.375), (326833.125), (226). 462.5), (756953.), (380302.25), (290515.375), (201298), (137525), (327225) dinars, respectively.

It is clear from the foregoing that the traditional costing systems applied in the current business environment are not appropriate, as they are no longer able to provide the management with information that helps in making decisions as a result of the changes taking place in this environment, most notably the intense competition, as the traditional costing systems suffer from the problem of allocating and distributing indirect costs from As it collects these costs in one cost complex and then allocates these costs through one cost vector, which leads to distortion of the cost figures related to the product.

In light of the application of (RCA) technology, what this technology relies most on is determining the amount of incoming consumption at the cost target represented by the product or service, which is reflected in determining the cost of each of them in a more detailed and appropriate manner, as this technology provides more realistic information through Determining idle energy and its costs and not charging it to the product, which helps the administration in optimal utilization of energy and determining the share of resource pools from the costs.

THE FOURTH TOPIC: CONCLUSIONS AND RECOMMENDATIONS

4-1 Conclusions:

The research reached the following conclusions:

1. The resource consumption accounting technique is one of the modern costing techniques that provides more appropriate and detailed information on the activities related to the product and in a way that helps in making decisions.
2. The main objective pursued by companies in adopting the application of resource consumption accounting technology is the optimal utilization of the resources of the economic unit in order to reduce production costs, achieve customer requirements and support the competitive position of the economic unit.
3. The application of resource accounting technology achieves many advantages, including tracking resource paths and costs related to them in detail, which helps to allocate them appropriately to production processes.
4. The technique of accounting for resource consumption helps in achieving self-monitoring of activities by going down in cost analysis processes to the partial level, which is the level of resources and not on the basis of the macro level of the economic unit as a whole. This helps in rationalizing resource consumption and controlling idle energy.
5. The technique of accounting for resource consumption can help in controlling costs and utilizing the available resources through analyzing the cost to the partial level, which is the resource level, and not on the basis of the total level of the economic unit.

4-2 Recommendations:

The research recommends the following:

1. The need to track the paths of resources and the costs related to them in detail, which helps to allocate them appropriately to the production processes.
2. Management has a good understanding of the interrelationships between resources, which supports the decision-making process to help determine idle energy and associated costs, which enables management to properly direct that energy and exploit it or take the appropriate decision regarding it to serve the objectives of the economic unit.
3. The need for proper management of invested resources and directing them towards activities that achieve value for the customer and the economic unit, and for eliminating waste by improving the performance of activities related to the product.
4. Work to provide the necessary information to plan the operations of the economic unit, whether at the strategic, tactical or operational level, in order to help control costs and make optimal use of resources.
5. The need to achieve self-monitoring of activities by going down in the cost analysis processes to the partial level, which is the level of resources, and not on the basis of the macro level of the economic unit as a whole. This helps in rationalizing resource consumption and controlling idle energy.

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