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The Third Generation of the Performance-Based Activity-Based Accounting (PFABC) Approach and its Role in Evaluating Banking Performance - A Case Study in the Bank of Baghdad

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Abstract: The research aims to review the conceptual development that the ABC approach has gone through through successive generations that moved from the principle of dividing the performance of the economic unit according to activities, and then moving to linking the performance of activities to the time it needs accurately to avoid wasting time. The latest development in the activity approach came under the name of the PFABC system to represent the point of connection for two systems: the activity-based costing system (ABC) and the activity-based management system (ABM), which links the determination of indirect costs on products and services, with measuring the performance of departments independently of each other and identifying deviations in the efficiency and effectiveness of production volume. In this research, cost accounting was employed based on performance-based activity for the purpose of evaluating the performance of one of the Iraqi private banks listed on the Iraq Stock Exchange, which is the Bank of Baghdad. The performance of the research sample bank was evaluated for the fiscal year 2023, and the information contained in the financial and administrative reports and the bank's various records were analyzed within the limits of the requirements of the nine proposed steps for operating PFABC.

The most important conclusion was reached, which is that the performance evaluation results for both the main activities and the supporting activities showed unfavorable deviations from the final evaluation that aimed to evaluate the productivity that was formed from the efficiency and effectiveness evaluations of the research sample bank. As for the most important recommendations, they emphasized the need to give utmost importance to the methods of evaluating its performance and abandoning traditional methods and keeping pace with the developments in management accounting techniques and the diversity of financial and non-financial indicators that enable it to reach results of the utmost accuracy and predictive value.

Keywords: Activity-based costing - Time-driven activity-based costing - Performance-based activity-based costing - Banking performance evaluation.

Introduction

In the context of global transformations and emerging challenges faced by economic units, there is a strong drive toward continuous development and improvement. This drive is characterized by the economic units' persistent efforts to effectively utilize available resources through clear goal setting, adequate resource allocation, and careful performance monitoring. Here, the need for ongoing updates in performance evaluation becomes evident, as adapting to rapid changes is crucial to achieving the best possible outcomes in performance evaluation. This is reflected in

most management accounting approaches and techniques aimed at optimal resource use, efficiency, and effectiveness. These methods involve continuous performance evaluation and assessment to reduce deviations to a minimal level. One prominent approach is Activity-Based Costing (ABC) and its third generation, Performance Focused Activity-Based Costing (PFABC). PFABC facilitates performance evaluation, identifies deviations, and provides alternative .corrective measures

Banking performance is one of the influential and key factors for the national economy because of its impact on the future of banks, their shareholders and those dealing with them, as banking performance measures what has been achieved and compares it with previous plans to determine deviations from the established plans. Banks have great economic and social importance because of the financial services, credit facilities and various social services they provide. Accounting information is the most important means of planning, controlling, and evaluating operations in order to evaluate performance in banks. Thus, the research will aim to employ Performance Focused Activity Based Costing in evaluating banking performance.

Methodology:

First: The research problem

The banking sector is the main driver of the Iraqi economy and the process of evaluating its performance is essential for the purpose of determining the possibility of achieving the planned goals and thus supporting the national economy. Therefore, it is necessary to evaluate the bank's performance and identify the strengths and weaknesses and the bank's ability to develop its performance.

The research problem is represented in the banking sector's use in the local environment of traditional evaluation standards that are insufficient to confront the tremendous changes in the business environment and express the extent of the bank's ability to exploit available resources and achieve efficiency and effectiveness, in addition to the focus on the final evaluation without resorting to continuous evaluation that leads to obtaining clear results when carrying out the .process of evaluating the performance of banking activity

The research problem can be formulated with the following question :Does adopting activity-based cost accounting based on performance in evaluating bank performance lead to improving the bank's performance evaluation process?

Hypothesis

The research is based on the hypothesis that:

"The use of activity-based cost accounting based on performance provides information that improves the performance evaluation process in Iraqi banks".

Objective

The research aims to:

- Explaining the historical development of the activity-based cost accounting approach with its three generations.
- Reviewing the practical steps of activity-based cost accounting based on performance.
- Using the activity-based costing technique based on performance in evaluating banking performance in the research sample bank.

The Importance Of Research

The importance of the research comes from the importance of the banking sector in the Iraqi economy, as the Iraqi banks registered in the Iraqi Stock Exchange occupy more than 73% of the total trading, and this indicates the urgent need to develop this sector for its direct impact on reviving and supporting the Iraqi economy, and to achieve all of this, it is necessary to shift from

evaluating the performance of Iraqi banks using the traditional methods known and activate modern management accounting techniques to improve banking performance and achieve efficiency and effectiveness, and for Iraqi banks to occupy prestigious positions in the local economy and the Arab and global economies.

Research Community

The research community is represented by Iraqi banks registered in the Iraq Stock Exchange, while the sample was represented by the Bank of Baghdad, and its performance was evaluated for the fiscal year 2023 .

Research Variables

Independent variable: Activity-based costing technique based on performance. Dependent variable: Bank performance evaluation.

Theoretical Aspect

Banking performance evaluation and costs based on performance-based activity (PFABC)

First: Banking performance evaluation

The process of evaluating banking performance is the final stage that proves the validity of the stages of the planning process in the economic unit. After setting plans by determining the objectives to be achieved, and starting implement them, they must be followed up and audited to identify deviations that may accompany the process of achieving strategic and operational plans, and to determine the corrective steps for those deviations. (Al-Hassani and Al-Jabri: 2021: 99)

The concept of banking performance evaluation cannot be viewed as a narrow concept for evaluating the banking services provided, which focuses on using simple outputs based on financial ratios. Rather, the process of evaluating banking performance goes beyond the narrow perspective to a broader concept, defined as "the ability to operate efficiently, remain in the market, grow, and interact with environmental opportunities and challenges. Thus, financial performance is measured through the extent of the bank's efficiency in exploiting the resources available to it to achieve the planned goals" (Bird & Westly, 2011: 11) (Ojong & Ekponta, 2014: 6).

From the above, the process of evaluating banking performance can be viewed as a set of complementary procedures to the planning process, which shows the results of the work achieved by the bank based on a set of financial and non-financial indicators and ensuring the optimal use of available resources and investing them effectively to achieve the planned goals based on those standards, criteria and indicators that measure the bank's work. It is also a tool for revealing and enhancing the bank's strengths and weaknesses to address and eliminate them, i.e., to identify positive paths and deviations to enhance them and negative deviations and know their causes and try to treat them to stay on the right track. (Al-Hassani and Al-Jabri: 2021: 100).

Second: Stages of development of the ABC approach to accounting

Costing systems have played a fundamental role in the operations of economic units, their outputs have been used in both external and internal reporting, and they have been used by various stakeholders including accountants, managers, auditors, and government. These systems have also had major applications, particularly in the areas of inventory costing, product pricing, taxation, and even product marketing. (Jansen: 2018:1497)

Due to the increasing competition, the development of markets at the international level, the focus on customer satisfaction, and the rapid growth in information technology and manufacturing technology. These changes have forced management accounting professionals and academics to focus on providing strategic cost information more than ever before, and the most important strategic challenges for management accounting have become identifying the factors that affect the design and implementation of contemporary cost systems in response to

the changes in the business environment. It is adopted with the aim of predicting future complexities and providing relevant information to help stakeholders make strategic decisions (Rickards & Ritsert: 2018:21)

First generation: Activity-based costing system (ABC)

Cooper, Kaplan, and Johnson (1980) played a significant role in identifying the shortcomings of traditional management accounting systems in providing accurate cost information. In the 1980s, Kaplan proposed activity-based costing for the first time as a solution to the problems of traditional systems and ABC is used as the best known method in management accounting for several years which came in response to the need of the production sector to address the dissatisfaction with the use of traditional costing systems. (Alinezhad & Saviz:2013: 6)

According to Cokins' theory, the reason for the emergence of ABC results from three factors:

1. Changing the company's cost structure, i.e. increasing overhead costs versus decreasing direct payment costs and direct material costs.
2. The problem of calculating the time spent by workers in carrying out the activities assigned to them, as the entire time spent in carrying out these activities is reported theoretically, but a large proportion of this time is not used and the calculation of cost rates is based on the full exploitation of resources while ignoring idle capacities.
3. The emergence of the relational database and fourth-generation languages, which makes the rapid organization of complex data possible. This system has three basic parts:

(Resources - Activities - Cost Objective)

(Ghadimpour & Shahvalizade: 2014:583)

Activity-based costing (ABC) is basically a costing system that relies on the direct allocation of indirect costs to activities rather than to departments by focusing on the relationship between activity and cost. Activity-based costing (ABC) is an approach that involves identifying activities for each cost pool such as products, services, or customers by measuring the cost and performance of activities and resources. It provides more accurate cost information due to the precise identification of causal relationships between resources, activities, and cost target. ABC has been defined as a tool for total quality management by driving the performance of resources, activities and cost target of products and services (Horngren, et. al, 2018 :180). ABC is designed on the following assumptions: (Namazi: 2016:1018) (Kaplan & Cooper: 1998:63)

1. Activities consume resources.
2. Products and services consume activities.
3. The system focuses on consumption rather than spending.
4. Each consumed resource has a different direction.
5. Activities can be used in multiple products and services for different pools.
6. There is homogeneity between different cost pools.

Despite the important advantages of the ABC system, there are many difficulties and problems when using it, especially for complex activities. The most important problems are: (Bruggeman atl: 2005: 3)

1. Complexity in Cost Model Design and Construction: The complexity arises from the use of multiple cost drivers, such as (shares, time, material quantities, etc.), aimed at reducing aggregation errors and achieving greater accuracy in monitoring resource consumption according to products and services.

2. High Cost of This Method: The method incurs significant expenses because it relies on allocating substantial amounts for research and development, sometimes exceeding the cost of the products or services offered.
3. Information Reliability Issues in ABC: The information produced by Activity-Based Costing (ABC) as an accounting system is often based on individual preferences due to the lack of standardized criteria for selecting cost drivers. Additionally, the system does not provide reliable ways to verify the accuracy of this information.
4. Lack of Contribution to Customer Satisfaction: ABC does not help clarify the relationship between activities and customer satisfaction, which is a primary and shared objective for all profit-oriented economic units.

This is what Kaplan emphasized by questioning, "Why has the ABC system not been universally accepted even after 10 years of its introduction, despite the appealing value of this proposal?" According to an annual survey conducted by major companies, the ABC system was rated below average, with only 50% acceptance, which is a low rate compared to what the system offers companies in terms of providing a comprehensive understanding of product costs, profitability, processes, and services. As a result, academic and professional efforts have emerged to develop and improve this system through its second generation, known as TDABC. (Kaplan: 2007:10 & Anderson).

Second generation: Time-driven activity-based costing (TDABC)

Kaplan and Anderson describe the time-driven activity-based costing (TDABC) system as an "elegant and more accurate approach" that solves all the problems of the traditional ABC system. It is much simpler, cheaper, and more powerful than the traditional ABC system due to its advantages: (Kaplan: 2007:24-25 & Anderson) (Namazi: 2016:1019).

1. TDABC is easier and faster to build an accurate costing program.
2. It integrates well with ERP and CRM systems by using the same data, making the system more dynamic and less human resource intensive.
3. Reduce the processing and supply costs of production orders by adopting specific characteristics of specific orders, processes, suppliers, and customers.
4. It can be re-adopted for subsequent operational periods as it provides visibility into process efficiency, capacity utilization and resource demand forecasting, allowing companies to budget resource capacity based on expected order volumes and complexity.
5. The accounting program designed on it can be updated quickly and at low cost.
6. Provides detailed information to help users identify the root cause of problems.
7. It can be used in any industry or company with complexity in customers, products, channels, sectors, processes, and capital expenditures.

The importance and distinction of the TD-ABC model is related to time estimation, as it was previously proposed to use the traditional ABC system based on the load rate for each activity, which is the normal capacity of a set of resources (in working hours), consumed by different activities. In the TD-ABC system, the resources used for these activities are allocated according to the standard time required. What is new in TD-ABC is that the time required to perform each activity is now estimated for each industry independently based on the distinctive characteristics of this industry. The result of these estimates is the identification of "time drivers" for building "time equations". (Drury, 2018: 264)

In addition to considering the TDABC system as a correction for the defects and obstacles that appeared in the TDABC system, many criticisms of it appeared during its application, which were reached after surveys in various economic sectors. The system was also criticized, although it can be applied in different industries, this application remains limited to activities that are

measured by time, because it is the only "cost driver". In addition to the problems of measuring time, the process of measuring the time required for each activity is subject to personal or subjective evaluation. Moreover, the cost system based on time-oriented activities suffers from the following obstacles and shortcomings: (Riediansyaf, & Basuki: 2014:28) (Namazi: 2016:1019)

1. Although TDABC can be applied to various economic sectors, it gives the best results in industries where time drivers are the most appropriate drivers for distributing and allocating costs.
2. Failure to identify the activity in the first stage leads to the TDABC system deviating significantly from the philosophical depth of the "activity-based costing" approach if the activities are not identified, as a single cost rate is calculated for the entire activity, which is a return to traditional cost accounting systems.
3. Although TDABC approaches simplicity and accuracy in determining the loading rate, it only accommodates a unified cost rate for all departments, as it is easy to apply time-driven ABC only in the economic sector that performs a single activity .

Third Generation: Performance-Based Activity-Based Costing (PFABC)

In all economic units, managers must always manage two separate accounting systems. One is to determine product costs and the other is to guide and evaluate performance. Maintaining these systems exposes the management of the organization to high expenses as well as many problems. To overcome this problem, a unified system called “Performance Based Costing with Activity Focus” (PFABC) has been proposed. (Namazi: 2009:33)

In 2009, Namazi introduced the third generation of ABC under the name of performance-based activity-based costing. This system, unlike TDABC, focuses heavily on the time vector, in addition to choosing different cost vectors, creating greater flexibility in allocating costs to activities created within the economic unit. The PFABC system is the link between two systems: the activity-based costing system (ABC) and the activity-based management system (ABM), which links the determination of indirect costs on products and services, with measuring the performance of departments independently of each other and identifying deviations in the efficiency and effectiveness of production volume (Al-Hamrouni: 2016: 441).

- **Step 1: Identify key activities.**

  The nature and behaviour of the cost of any activity differs from the costs related to other activities in the same department and this step is an essential element of the ABC system and a crucial step for allocating the costs of different activities.

- **Step 2: Determine the actual resources used in each activity.**

  Actual resources in PFABC are determined in an unusual way from the previous two generations ABC and TDABC, as the workers performing the activities determine the type and quantity of actual resources used in each activity, either based on their preferences or by referring to the database of the economic unit. This step includes determining the behavior of actual resources and their cost according to the behavior of costs, as resources are divided into two types: flexible resources, whose behavior is like variable costs, and committed resources, whose behavior is like fixed costs.

- **Step 3: Determine an actual rate for each activity resource .**

  The actual rate of each activity in the traditional TDABC system is determined by the portion of time required to perform each activity by the workers, while in the PFABC system the actual cost rate is determined for each activity of the economic unit separately on the basis of different cost drivers based on the database in the economic unit and based on the actual data of the resources, their type and their cost behavior .

- **Step 4: Determine the cost of each activity .**

  The PFABC system determines the cost for each activity, considering the cost behavior of resources. When resources are flexible, their costs are variable. The costs of production factors are determined through the following:

Actual cost of activity = Actual amount of resources required for the activity × Actual price of resources consumed for the activity

- **Step 5: Calculate the activity download rate.**

This step is not present in the ABC and TDABC systems, but it is a major step in implementing the PFABC system. In this step, the standard rate for each activity is estimated using different methods, including work allocation measures and tools, internal and external benchmarks, and market mechanics. The standard rate must be calculated with high accuracy because it will be used as a basis for comparison with actual rates .

- **Step 6: Calculate the price variance for activities.**

This step is a different addition to the traditional ABC system, and like what the TDABC system works with. To implement this step, cost center managers determine the price variance by calculating the actual resources required for the activity and multiplying them by the standard price of the consumed resources. The result is subtracted from the actual cost of the activity to obtain the price variance for flexible resources. There is no price variance for committed resources because they are fixed and do not change. The actual price is then compared with the standard price to arrive at ABC and the price variance for flexible resources .

Flexible resource price variance = (Actual quantity of resources required for the activity × Estimated standard price of the resources) – Actual cost of the activity (Actual quantity of resources required for the activity × Actual price of the resources)

- **Step 7: Calculate the cost of activities.**

For flexible resources, the standard quantities of resources consumed for the purpose of performing the activity are first determined. These must be determined with a high degree of accuracy because they will be used as a reference measure for comparison with the actual resources used. Work measures or statistical methods such as regression analysis can be used to calculate these standards. This step represents the following equation:

Flexible resource cost of activity = (Standard quantity of resources needed to produce the unit × Quantity of production completed) × Standard price of flexible resources.

- **Step 8: Calculate quantity variance.**

This deviation is new and specific to the PFABC system and is determined by comparing the standard quantities (Flexible Budget) (FB) and the implemented resources (Applied Resource) (A) that were calculated in the previous step. There are three possibilities for this evaluation, which are :

- ✓ The first possibility: FB < A, which is an unfavorable deviation, and the performance evaluation is negative. The second possibility: FB>A, which is a favorable deviation, and the performance evaluation is positive. The third possibility: FB = A, in which case there is no deviation, neither negative nor positive.

- **Step 9: Calculate activity productivity.**

Most of the useful information in evaluating the performance of administrative processes is related to the process of determining the productivity of activities. This essential information is not available in the traditional ABC system and the TDABC system. It is a vital and important part of the PFABC system, as productivity = efficiency + effectiveness.

Efficiency here means the efficiency in using resources (price variance + quantity variance). This is like the first step in traditional ABC, which was omitted in TDABC. Productivity represents the efficiency in using resources (price variance of the resources consumed by the activity + quantity variance of the resources used by the activity). As for the effectiveness of the activity, it can be determined from the planning budget. As for the effectiveness variance related to the committed resources, it represents the difference between the actual work and the planned work.

Practical Aspect: Evaluating Banking Performance According to PFABC in the Bank of Baghdad

First: An Overview of the Research Sample Bank (Bank of Baghdad)

The Bank of Baghdad Group was established as a private Iraqi joint stock company on February 18, 1992, with an initial capital of 100 million Iraqi Dinars, and started its exchange business on September 12, 1992. Until September 25, 1998, the Bank of Baghdad practiced only commercial banking business. After that, the Bank's Articles of Association were amended by the Central Bank of Iraq, allowing it to practice full and comprehensive banking services. As a result, the Bank witnessed expansion and capital increase year after year.

In 2005, United Gulf Bank and the Iraqi Holding Company became major shareholders; the bank's capital grew further, allowing it to expand its international banking operations inside and outside Iraq.

In 2006, a management agreement was concluded between United Gulf Bank and the Board of Directors, entrusting United Gulf Bank with the management of the bank. In 2009, Burgan Bank acquired United Gulf Bank's stake to become the largest shareholder. The valuable participation of the new shareholders strengthened the bank's position in diversifying international banking services with a focus on technology and competitive services.

In July 2010, Bank of Baghdad received the final official approval from both the Central Bank of Lebanon and the Central Bank of Iraq to establish and open a fully operational branch in Lebanon. This branch provided stronger links with Iraq for international trade operations and served as a regional hub for expanding the Bank's capabilities. The Bank's capital currently stands at 250 billion Iraqi Dinars, fully paid.

Second: Evaluating the performance of the Bank of Baghdad according to the PFABC

The activity-based costing system will be implemented based on performance through its nine steps that were discussed in the theoretical aspect, as follows:

- **Step 1: Identify activities.**

In this step, the main activities and supporting activities that constitute the banking performance of the research sample bank are identified, as follows:

Table No. (1): Main activities and supporting activities.

Resources used	Type of activity	Activity
working hours	Main activity	Current Accounts
working hours	Main activity	Deposit Accounts
working hours	Main activity	Savings Accounts
working hours	Main activity	Fund Accounts
working hours	Main activity	Accounting & Auditing
working hours	Sanid Activity	Human Resources & Marketing
working hours	Sanid Activity	Bank Management

Source: the researcher based on the organizational structure of the research sample bank.

- **Step 2: Determine the actual resources used in each activity.**

Working hours were relied upon as a resource for all main and supporting activities, as banking activity is a service activity that does not provide tangible products, as follows:

Table No. (2): Resources of Main Activities and Supporting Activities.

Activity Hours	Employee working hours	Number of Employees	Activity
210672	7	114	Current Accounts
190344	7	103	Deposit Accounts
164472	7	89	Savings Accounts
85008	7	46	Fund Accounts
131208	7	71	Accounting & Auditing
232848	7	126	Human Resources & Marketing
559944	7	303	Bank Management

Source: the researcher based on the organizational structure of the research sample bank.

The total working hours for each of the main and supporting activity centres were calculated by determining the number of workers in each activity centre and determining the daily working hours as seven hours per day multiplied by 22 actual working days per month and 12 months per year.

- **Step 3: Determine an actual rate for each activity resource .**

The actual rate for each resource is determined by identifying the actual costs extracted from the financial statements of the research sample bank and specific to each activity, and distributing those costs to the activity guide that was calculated in Table No. (2), which are the working hours as shown in the previous paragraph and as follows:

Table No. (3): Actual loading rates for main activities and supporting activities.

Actual rate	Activity Hours	Actual costs	Activity
3367.38	210672	709413357.5	Current Accounts
3763.68	190344	716394072.6	Deposit Accounts
3476.35	164472	571762739.05	Savings Accounts
4411.75	85008	375034031.87	Fund Accounts
3679.34	131208	482758852.29	Accounting & Auditing
25764.56	232848	5999226592.74	Human Resources & Marketing
9923.30	559944	5556492355.7	Bank Management

Source: the researcher based on actual data of the research sample bank.

- **Step 4: Determine the cost of each activity .**

In this step, the actual rate reached in the previous step is adopted and multiplied by the actual hours that the activity actually needs to be implemented, as determined by the middle managements that are responsible for planning and implementing the activities and supporting activities, to arrive at the total cost for each activity, as follows:

Table No. (4): Actual costs of main activities and supporting activities.

Actual costs	Actual rate	Actual Hours	Activity
645439194.12	3367.38	191674	Current Accounts
672027646.08	3763.68	178556	Deposit Accounts
575933857.2	3476.35	165672	Savings Accounts
379110501	4411.75	85932	Fund Accounts
491118303.2	3679.34	133480	Accounting & Auditing
5918067902.8	25764.56	229698	Human Resources & Marketing
6164373806.6	9923.30	621202	Bank Management

Source: the researcher based on the hours specified for implementation by the activity centres' administrations.

- **Step 5: Calculate the activity download rate.**

After determining the actual performance variables of actual costs and actual hours to arrive at an actual rate, the standard loading rate will be determined in this step by relying on the planning budgets prepared in previous operating periods and determining the standard costs and standard working hours included in those plans, which were prepared according to reference comparisons for previous years and studying the mechanics of the expected demand for banking services, the costs of those services and the time required to implement them, as follows:

Table No. (5): Determining the standard rate.

Standard load rate	Standard Hours	Standard costs	Activity
3222.08	208824	672848000	Current Accounts
3639.2	188496	685983000	Deposit Accounts
3645.4	162624	592842000	Savings Accounts
4589.6	83160	381675000	Fund Accounts
3827.4	129360	495112000	Accounting & Auditing
2138.2	231000	493932000	Human Resources & Marketing
1115.2	558096	622368000	Bank Management

Source: the researcher based on the costs and standard hours specified according to the operational plans of the research sample bank.

- **Step 6: Calculate the price variance for activities.**

In this step, the price deviation is determined by comparing the actual costs calculated according to the actual rate and the costs calculated according to the standard rate, as follows:

Table No. (6): Determining the price deviation.

Deviation type	The magnitude of the deviation	Hours Executed *Standard Average	Actual costs	Activity
Not preferred	(27850232.2)	191674 X 3222.08	645439194.12	Current Accounts
Not preferred	(22226650.88)	178556 X 3639.2	672027646.08	Deposit Accounts
Preferred	28006851.6	165672 X 3645.4	575933857.2	Savings Accounts
Not preferred	(15283006.2)	85932 X 4589.6	379110501	Fund Accounts
Not preferred	(19763048.8)	133480 X 3827.4	491118303.2	Accounting & Auditing
Not preferred	(5426927639.2)	229698X 2138.2	5918067902.8	Human Resources & Marketing
Not preferred	(5471609336.2)	621202 X 1115.2	6164373806.6	Bank Management

Source: the researcher based on the previous calculations in Steps 4 and 5.

The above table shows the poor management estimates through what is observed of the prevalence of unfavorable deviations in most activity centers. It is worth noting that the deviations were in large and noticeable amounts in the support activity centers, and the only department in which the management was successful in estimating its indirect costs, and the actual costs were less than the costs specified according to the standard rate by an amount of 28,006,851.6 dinars.

- **Step 7: Calculate the cost of activities.**

In this step, the cost of the activities implemented by the research sample bank is determined according to the flexible budget by multiplying the actual hours implemented by the standard rate that was determined in the fifth step, as follows:

Table No. (7): Finding the standard rate.

Costs of activities conducted	Standard rate	Executed Hours	Activity
617588961.92	3222.08	191674	**Current Accounts**
649800995.2	3639.2	178556	**Deposit Accounts**
603940708.8	3645.4	165672	**Savings Accounts**
394393507.2	4589.6	85932	**Fund Accounts**
510881352	3827.4	133480	**Accounting & Auditing**
491140263.6	2138.2	229698	**Human Resources & Marketing**
692764470.4	1115.2	621202	**Bank Management**

Source: the researcher based on the hours worked and the standard rate calculated in the previous tables.

- **Step 8: Calculate quantity variance.**

In this step, the quantity deviation is determined by comparing the standard costs with the flexible budget costs that were determined by multiplying the standard rate by the hours executed in the previous step, as follows:

Table No. (8): Determining the quantity deviation.

Deviation type	The magnitude of the deviation	Standard costs	Standard costs	Activity
Preferred	55259038.08	617588961.92	672848000	Current Accounts
Preferred	36182004.8	649800995.2	685983000	Deposit Accounts
Not preferred	11098708.8	603940708.8	592842000	Savings Accounts
Not preferred	12718507.2	394393507.2	381675000	Fund Accounts
Not preferred	15769352	510881352	495112000	Accounting & Auditing
Preferred	2791736.4	491140263.6	493932000	Human Resources & Marketing
Not preferred	70396470.4	692764470.4	622368000	Bank Management

Source: the researcher based on previous accounts and data from the research sample bank.

From what was calculated above to find the difference between the standard costs and the costs extracted from multiplying the standard rate by the hours actually executed, the deviations were reached that fluctuated between negative and positive, as the current and deposits centers, human resources and marketing came with positive deviations indicating the correctness of the estimates of indirect costs, while the rest of the activity centers did not succeed in the management with correct estimates, as the actual costs came higher than what was planned in the standard costs, especially in the bank management center, which came with a large negative deviation amounting to 70,396,470.4 dinars.

- **Step 9: Calculate activity productivity.**

In this step, (efficiency + effectiveness) are combined. Efficiency is determined by adding the price deviation with the quantity deviation to reach the efficiency of the activity center. After that, effectiveness is determined by determining the difference between the costs of the implemented activities and the costs of the planned activities, as follows:

First: Determine efficiency

The efficiency of implementing the main activities and supporting activities is determined by adding the result of the deviations calculated in the previous steps, which are the price deviation and the quantity deviation, as follows :

Table No. (9): Determining the efficiency of main and supporting activities.

Deviation type	The magnitude of the deviation	Quantity deviation	Price deviation	Activity
Preferred	27408805.88	55259038.08	(27850232.2)	Current Accounts
Preferred	13955353.92	36182004.8	(22226650.88)	Deposit Accounts
Preferred	16908142.8	11098708.8	28006851.6	Savings Accounts
Not preferred	(28001513.4)	12718507.2	(15283006.2)	Fund Accounts
Not preferred	(35532400.8)	15769352	(19763048.8)	Accounting & Auditing
Not preferred	(5424135902.8)	2791736.4	(5426927639.2)	Human Resources & Marketing
Not preferred	(5542005806.6)	70396470.4	(5471609336.2)	Bank Management

Source: the researcher based on previous accounts and data from the research sample bank.

From the above table, the main activities represented by the current account, deposit and savings centers are efficient activities through what is shown because of measuring the efficiency resulting from adding the price deviation and the quantity deviation. As for the fund accounts, accounting, and auditing, they came with negative results and the total deviations reflected the poor management estimates. As for the auxiliary activities, they came with bad results that reflect a large gap indicating an urgent need to study the reasons for these enormous differences and determine ways to address them.

Second: Determining effectiveness

Effectiveness is determined by the difference between the costs of planned (standard) activities identified in step five and the implemented costs identified in step seven, as follows:

Deviation type	The magnitude of the deviation	Standard costs	Actual costs	Activity
Not preferred	(36565357.5)	672848000	709413357.5	Current Accounts
Not preferred	(30411072.6)	685983000	716394072.6	Deposit Accounts
Not preferred	(21079260.95)	592842000	571762739.05	Savings Accounts
Preferred	6640968.13	381675000	375034031.87	Fund Accounts
Preferred	12353147.71	495112000	482758852.29	Accounting & Auditing
Not preferred	(5505294592.74)	493932000	5999226592.74	Human Resources & Marketing
Not preferred	(4934124355.7)	622368000	5556492355.7	Bank Management

Table No. (10): Determining the effectiveness of main and supporting activities.

Source: the researcher based on previous accounts and data from the research sample bank.

From the table above, it is clear that there are two main activity centers that came with higher efficiency than what was planned within the standard costs, which are the fund accounts, accounting, and auditing centers. As for the supporting activity centers, they came with very weak efficiency and a large planning and implementation gap that led to the implementation of activities with a major difference from what was planned within the standard costs.

Third: Determine productivity

This procedure represents the final building block in the ninth step of the performance evaluation steps on stopping the activity based on the performance-based activity of the research sample bank. Here, the efficiency results of the activity centers and the effectiveness results of the activities will be combined to arrive at which activity centers had positive performance and were implemented as planned within the standard costs and employee performance as it should be, as follows :

Deviation type	The magnitude of the deviation	Effectiveness	Efficiency	Activity
Not preferred	(9156551.62)	(36565357.5)	27408805.88	Current Accounts
Not preferred	(16455718.6)	(30411072.6)	13955353.92	Deposit Accounts
Not preferred	(4171118.15)	(21079260.95)	16908142.8	Savings Accounts
Not preferred	(21360545.27)	6640968.13	(28001513.4)	Fund Accounts
Not preferred	(23179253.09)	12353147.71	(35532400.8)	Accounting & Auditing
Not preferred	(10929430498.54)	(5505294592.74)	(5424135902.8)	Human Resources & Marketing
Not preferred	(10476130162.3)	(4934124355.7)	(5542005806.6)	Bank Management

Table No. (11): Determining the productivity of main and supporting activities.

Source: the researcher based on previous calculations

It is clear from the table below that the performance of the main and supporting activity centers was not positive and the outcome of the practical application was not in favor of the bank's management, reflecting poor planning by the management, poor implementation, and weak performance by the bank's employees, the research sample. Here, the urgent need to take necessary and urgent corrective steps appears to correct the operational budgets and cost planning methods and improve the performance of the employees in the bank, the research sample.

Conclusions and Recommendations

First: Conclusions

1. The most important strategic challenges of management accounting are to identify the factors that affect the design and implementation of contemporary costing systems in response to the variables in the business environment. They are adopted with the aim of predicting future complexities.
2. Activity-based costing first appeared as solutions to the problems of traditional systems and ABC is used as the best-known method in management accounting that came in response to the need of the production sector to address dissatisfaction with the use of traditional costing systems.
3. The PFABC system is the link between two systems: the activity-based costing system (ABC) and the activity-based management system (ABM), which links the determination of indirect costs on products and services, with measuring the performance of departments independently of each other and identifying deviations in the efficiency and effectiveness of production volume.
4. When dividing the activities of the bank, the research sample, into main and auxiliary, it was noted that the auxiliary activities were evaluated with a significantly unfavorable deviation and a larger performance gap than the main activities.
5. The performance evaluation results for both main activities and supporting activities came with unfavorable deviations for the final evaluation that aimed to evaluate productivity, which consisted of efficiency and effectiveness evaluations for the bank, the research sample.

Second: Recommendations

1. Economic units should give utmost importance to methods of evaluating their performance and abandon traditional methods and keep pace with developments in management accounting techniques and the diversity of financial and non-financial indicators that enable them to reach highly accurate results and predictive value.
2. The need for the research sample bank to benefit from the most important advantages of the activity system based on the activity based on performance that works to evaluate the results of the activities of the economic unit as well as evaluate the performance of employees in the research sample bank.
3. The need to reconsider the performance of the administrative departments in the research sample as well as reconsider the estimation of costs and working hours that are sufficient to provide banking services to avoid the obvious miscalculation from the performance evaluation that was implemented in the practical aspect.
4. The need for administrative departments to distribute tasks more in order to reach an objective distribution of tasks assigned to employees.
5. The need for employees in the research sample bank to engage in training courses aimed at developing employees' skills and enabling them to manage time and provide services faster and more professionally without compromising the level of quality of services provided.

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