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# Analyzing Cost Accounting Methods In Light of Technological Development and Their Impact on Managerial Decision-Making

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***Abstract***. *The objective of this study is to highlight the role of information technology in improving decision-making at the General Company for Electrical Industries in Baghdad. To achieve the study's objectives, a questionnaire consisting of 30 items was prepared and distributed to department heads and specialized employees. The data was analyzed using the SPSS. This study concluded that analyzing cost accounting methods considering technological development is one of the most important approaches for providing the necessary information to solve problems. Additionally, information technology facilitates communication, coordination, and the exchange of information between various departments and the external environment, while also providing accurate, appropriate, and sufficient information at the right time, thereby contributing to an improved decision-making process.*

***Keywords:*** *Cost Accounting Methods, Technological Development, Managerial Decision- Making, Modern Business*

## 1. INTRODUCTION

Economic units have witnessed tremendous development through progress in costing methods and technological development. Due to their large size, the need has led to an increase in precise methods and the complexity of the production process, which requires the need to achieve coordination, organization, and effective control. The increase in competition in the market requires increased skills in making appropriate decisions, new innovations and modern techniques, in order to achieve competitive advantage in the markets. An institution achieves its targets better when managers handle resources wisely to partner different assets. Management faces hard decisions that need proper handling due to many options to choose from. The generation of useful information rises to match this increasing demand because decision-makers rely on it. Institutional operations at all levels depend on present-day information systems to create well-thought-out choices for the institution itself and all who work there. Business entities also resort to modern methods to achieve good coordination between their various resources to achieve their goals. One of the modern methods is the cost accounting method, as it plays an effective role in collecting and classifying general accounting information and helps decision makers understand their strengths and weaknesses, which helps them make rational decisions. Modern cost accounting methods are strongly supported by academics and practitioners due to their

ability to address current challenges. It is also important for the continuous improvement of the performance of economic entities because it provides accurate information that meets the needs of economic entities.

**The Research Problem**

The research problem lies in the fact that the modern business environment has become more complex as a result of the rapid development of technology, which has put increasing pressure on companies to develop cost accounting methods to make more accurate and effective management decisions. However, there are still knowledge gaps regarding how these new technologies impact traditional cost accounting methods and what impact they have on the quality of management decisions.

**The Importance of Research**

The importance of research is as follows:

- Meeting the actual needs of institutions: The research provides practical answers to help institutions adopt the latest technologies in the field of cost accounting and process improvement.
- Developing academic knowledge: Research helps expand academic knowledge in the field of accounting and business administration.
- Supporting decision makers: The research provides valuable information to decision makers in companies and governments about the importance of investing in technology to improve business performance.

**The Research** Objectives

- Analyzing the ratios between technological development and traditional and modern cost accounting methods.
- Evaluate the impact of technology on the accuracy and speed of obtaining accounting information.
- Finding the positive and discretionary influences on administrative decision making.

**Research Hypotheses**

The research is based on the following hypotheses:

- There is a significant impact of technological development on cost accounting methods.
- There is a significant impact of technological development on managerial decision-making.
- There is a significant impact of cost accounting methods on administrative decisions.

## 2. LITERATURE REVIEW

- Abbasiya et al., (2017) entitled (Accounting the costs of contracting activities and its role in decision-making), The purpose of this study was to discover the contractor activity strategies and the degree of the readiness of economic policy in the contractor formation process. The study shared meaningful information about cost accounting. The finding most important results of this study are that the state always tries to increase the number of the contractors by financial support (loans and tax exemption), and moral support, which are represented in the form of advice and guidance, and that cost accounting is the most appropriate for construction contracts to determine cost, profit, and profitability.
- Krishan's (2013) entitled: (The effect of using information technology in increasing the efficiency of modern management accounting tools). The study revealed that there is a statistically significant effect in using information technology and its features (accuracy of the used information, suitability of the used programs, knowledge of the system and software users) in increasing the efficiency of contemporary management accounting tools represented by (total quality management, on-time production, system Activity-based cost accounting, activity-based management) in Jordanian public joint stock industrial companies.
- Study by Yassin, (2010). (Modern methods for calculating costs and decision-making in the organization). The study aims to present traditional and modern cost accounting methods, but the researcher focused on the latter for its effective role in providing accurate information about costs. In addition to this support, the researcher tried to apply on of the new methods of modern cost accounting which is the activity-based costing method by the Petroleum Corporation, GPL Blida branch. It finds out among the results reached that, the activity-based costing method gives the accurate information about the costs in a more reliable way, a way that facilitates the organization's senior management to make its administrative decisions.
- Study by Darahmoun, & Hilal (2005). (Analytical Accounting as an Information System for Management and Decision-Making) deals with the general concepts of organization, organization, cost and decision-making, including attempts to design an accounting information system for analytical accounting and the study of various traditional methods of cost calculation. Modern systems, despite their importance, were

completed briefly, and then the reality of analytical accounting in Algerian economic institutions and the prospects for their use were studied.

## 3. THEORETICAL FRAMEWORK

### The Concepts of Traditional Cost System.

The concept of cost accounting has become a necessary and vital matter for the stability of economic institutions and their ability to compete. This accounting is concerned with measuring costs to serve specific purposes that help the institution's managers perform various management functions as efficiently as possible.

**Definition of cost accounting**

There have been many definitions of cost accounting due to the many owners and their points of view. This is due to its comprehensiveness on the one hand, and its keeping pace with developments on the other hand.

Therefore, the definition of cost accounting is a set of principles, rules and procedures that are used to track cost elements and analyze these elements in a way that leads to determining the costs of the product (good or service) and controlling its cost elements to achieve production efficiency and providing analytical data to management to help it plan and make decisions on sound foundations. (Yaqoub & Bajay,2017: 4). While, (Al-Sheikh, 2008: 13) define the term of cost accounting as the one of the branches of financial accounting, and as a tool governed by a set of accounting principles and principles, it helps management control the use of production factors available to it and plan for the future. It also tracks and analyzes costs for the purpose of using them with the greatest degree of effectiveness. From the above, it can be concluded that cost accounting is a set of techniques and methods used to collect costs and determine the unit of production, services, or any process.

**Types of costs methods**

- **Direct costs methods**

  These costs are considered an attempt to address the criticism directed at the total cost method by some accountants.

  – **The concept of direct costs**: Direct costs charge production units with their share of direct costs only, while indirect cost elements are considered time expenses required by the activity. According to this type, indirect costs, whether related to production, marketing, or management, are not included in the costs, but are

charged to the profits and losses at the end of the period, on the basis that the units produced and sold are responsible for achieving direct costs only. This method is used with great success in contracting projects, because the nature of the costs in these projects is that most of them are direct costs, and they can be easily achieved. (Ahmed, 2010: 52).

- Advantages of the direct costing method:
  - Ease of determining the costs of units produced by dividing direct costs by the number of production units.
  - The stability of unit production costs due to the stability of unit production requirements for direct costs.
  - Eliminate personal opinions and judgments that dominate the processes of calculating and analyzing indirect costs and charging them to product units. (Ahmed, 2010: 53)
- Disadvantages of the direct costs method:
  - The unit costs calculated according to this method are not considered correct costs, because they neglect the elements of indirect costs (especially variable ones).
  - Excluding indirect costs from production costs and treating them as time costs is an incorrect process, because indirect costs occur in order to serve the activity.
  - This theory fails to serve management as a tool in the service of planning, control, and decision-making, because it excludes part of the variable costs from production costs. (Al-Rubaie &Hassan, 2010: 56)

- **Variable cost method**

For this method is more appropriate in terms of its use in the analysis and economic management of the institution and finding indicators used by management in the areas of planning, control and management in general.

- The concept of the variable cost method: This method charges the produced units with variable costs only, and excludes fixed costs from production costs, given that fixed costs are costs not related to the product. They are fixed and exist whether production occurs or not. They are treated by uploading them at the end of the period to the profit and loss account. (Al- Takriti, 2006: 65)

- Advantages of the variable costing method:

  It allows determining the profitability threshold, and thus making some decisions in the short term, such as maintaining the production of a specific product despite making a loss.
- The method is suitable for organizations that operate on an ordering system, because sales are equal to production.
- If the profit margin is known, changes in profit resulting from changes in the different volumes of sale can be determined. (Ahmed, 1999: 141)
- Disadvantages of the variable costing method (Ahmed, 1999: 141).
  - The method did not completely solve the problem of distributing the elements
  - of indirect costs. The accountant still faces the problem of determining the share
  - of the final product unit from the elements of variable indirect costs.
  - If the production sold is less than the organization's own production in the period, the ending inventory of products becomes valued at variable costs only.
- **Standard costing method**

  According to Nour & Al-Sharif (2006) the costs can define as a determined in advance on a practical basis in certain circumstances and which are taken as a basis for measuring and controlling actual costs.

  Therefore, the method is based on foundations and principles to achieve the following goals:
  - Identify deviations from the procedure for comparing standard costs with real costs.
  - Analyzing deviations in order to determine the reasons for their occurrence and who is responsible for them.
  - Standard costs are considered a tool for controlling production efficiency in terms of materials, wages, and other indirect industrial costs.
- ***Advantages of the standard costing system:***
  - It is used to monitor the organization's activity according to deviation, as a result of comparing standard activity with actual activity.
  - Obtaining immediate information when needed, and providing management with periodic reports on the institution's status and level of performance.
  - Working to improve conditions of exploitation by analyzing deviations and determining responsibilities.

- The standard costing method can be adopted as a basis for determining prices. (Abu Al-Hassan & Al-Dahrawi,2002:11)

- ***Disadvantages of standard costing system:***
  - Setting a standard, even if done on a correct basis, constitutes levels of results that are difficult to achieve.
  - After you determine the standard costs and begin implementing them, it is not possible to interfere or influence them, despite the occurrence of changes that require this.
  - The presence of inaccurate information and recording correct deviations leads to making irrational decisions. (Abu Al-Hassan & Al-Dahrawi, 2002:11)

**Contemporary cost accounting system techniques**:

For Reducing costs, improving quality, achieving competitive advantage, and eliminating activities that don't add value in light of the modern manufacturing environment, it has become important to support traditional cost accounting systems with contemporary techniques that meet the needs of management as well as the needs of all users. Contemporary cost techniques include the following:

- **Activity-based costing (ABC)**

  Is an approach of charging indirect costs to products and services based on the activities in which they engage? The objective of ABC is to find out the most important activities that use up a company's resources and distribute indirect costs to the products and services that cause such needs. ABC is especially helpful for companies with many products or services because managers can identify the costs of activities that are necessary to generate each of their products or services. This information then can be used by managers to decide (such as, what price to set) or alter the business of the company. (Whitecotton et al., 2020: 162)

- **Just-in-Time(JIT)**

  JIT is a system of materials arriving just in time to be ordered. In one order all necessary material is purchased or produced, and quick delivery eliminates waiting times and material inventory. The managers of companies such as Renault in France, AT&T in the United States, Honda Motors in Japan, Siemens in Germany, Cummins Engines in the United Kingdom, and DAF Trucks in the Netherlands feel that inventory is a waste and they can reduce waste or get rid of it through careful planning This is one of the key components of a just in time production system. (Bhimani elal., 2019: 662).

- **Product life cycle costs(PLC)**

  Regarding the concept of product life cycle cost technology, the literature has addressed this concept by providing several definitions for it. (Hansen, etal) defined it as all costs related to the product during its life cycle, which are represented by the development phase (planning, design, and testing), the production phase (conversion processes), and the support phase (advertising, distribution, and warranty) (Hansen, etal., 2009:739). (Datar & Rajan) also defines product life cycle cost as tracking and collecting the cost associated with each product through the value chain from the beginning of initial research and development to the end of after-sales services to customers. (Datar & Rajan, 2018: 560)

- **Target cost (TC)**

  Target cost per unit is the estimated long-term cost per unit of a product (or service) that, when sold at the target price, will enable the company to achieve its target operating profit per unit. The target cost per unit is obtained by subtracting the target operating profit per unit from the target price. (Bhimani & Horngren, 2015: 352.)

- **Kaizen cost (KC)**

  A process to reduce costs during the manufacturing process in the product life cycle through small, continuous improvements made to the manufacturing process instead of large, radical improvements and developments generated by renewal, innovations, and huge investments. (Hilton & Platt, 2017: 797)

- **Costing based on time-oriented activities.**

  The time-oriented activities costing approach is an approach based on a similar rule as that from which the activity based costing approach originated except that (ABC) rule is given an added dimension of time. It also involves the reduction of its application cost, the rapidity of its construction and implementation as well as its ease of being updated, this is as a result of its reliance on time vector in calculating costs and finding out the exploited capacity of resources. (Szychta, 2010: 53)

- **Technique - MixBC Product mix for allocating indirect costs to products.**

  The cost accounting technique based on the product mix was formulated on the basis of analyzes of the product mix (rather than on the basis of individual or individual products) and also on the basis of the assumption that the absence of a particular product from the mix provides evidence regarding the extent to which joint costs (which are costs shared by more than one product, usually indirect) will be utilized by that absent

product itself. The main advantage can be embodied in allowing for indirect and virtually inseparable common costs and expenses for each product. To be treated in a coherent mathematical manner, and in this context, uncertainties are calculated through a cost inference process based on exclusive production (only the product that is analyzed is produced) and excluded or excluded production (only the product that is analyzed is not produced). The MixBC method is a method that relies heavily and influentially on the practical experience and methodological vision of cost analysts, who must possess in-depth knowledge of the practical reality of the production operations of the economic unit, that the appropriate foresight of the specialists will be responsible for constructing and formulating interconnected and coherent scenarios for resource consumption, and that the practical application of the method will lead to the sound implementation of the task of cost distribution (Gregorio et. al, 2013: 11).

- **Cost based on specifications.**

  One of the proposed techniques to measure product costs based on their specifications is the ABCII technique, and an attempt to define and measure costs of product in a way that supplies management information to support reasoning on management choices. This name comes from the fact that the product specifications as basis are used to determine and measure costs. (Abdel Aleem, 1994: 14)

**The Concept and Definition of Information Technology.**

The term technology refers to the possibility of scientific application of advanced scientific methods that relate to new developments in processes or production, in addition to scientific progress affecting various activities that can be used (Abu Shanab, 1999: 81). Information technology includes every aspect of computer-based technology including networks frameworks computer systems Internet connectivity and personnel who use these tools. Organizations today maintain IT departments that handle all aspects of their technical systems. Information technology departments handle programming work, network maintenance, engineering projects, web development tasks and support services. In accordance with Al-Sulaiman's views in 2022: 359 information technology brings together multiple specialized employment groups. Processing and transforming data into reliable information helps organizations make better decisions (Ghaleb, 2009: 44). This discipline consists of knowledge areas built from scientific principles alongside technical know-how plus specific data that have undergone processing to make useful discoveries (Hamid, 2021: 6).

**The Relationship Between Cost Accounting Methods and Technological Development**

With technological development, new tools and systems have emerged that facilitate the process of collecting and analyzing data, which has led to the emergence of more sophisticated and accurate accounting methods, such as:

- **Enterprise Resource Planning (ERP) system:** An integrated system that allows an organization to unify its information system in order to link and automate its basic operations. It provides users with the information necessary to manage and monitor the organization's basic activities along the supply chain, from supply to sale and distribution to the final customer. Users enter the information once and the information is available to the entire organization. (Gabriel & Abdel Salam, 2022: 359)
- **Cloud computing:** It is one of the models for using information technology in a more effective way to keep pace with the development and rapid trend of dealing through Internet networks without the need to possess knowledge and experience, which contributes to avoiding the risks of purchasing assets from high-cost programs and computers, and helps save costs, especially fixed costs. (Ramzy & Trevi, 2024:402)

**Artificial Intelligence**

It is one of the computer sciences resulting from developments in information technology. It works to design intelligent information systems with the same characteristics as intelligence in human behavior, using algorithms that enable data to be processed in a logical manner and problems to be solved automatically. It is also possible to make better decisions, as artificial intelligence has accuracy, independence, and objectivity, and therefore decisions are free from error and bias (Al-Tantawi & Ibrahim, 2023: 132). Modern accounting methods can help evaluate technological investments and determine their effectiveness in terms of decision-making and cost rationalization.

**The Relationship Between Cost Accounting Methods and Administrative Decision-Making.**

Managers need accurate cost information which they obtain by dividing costs between direct and indirect types plus variable fixed and semi-variable components to use in their decisions and lower unit costs to achieve maximum profit margins. To reach this aim the institution needs to adopt modern cost accounting practices before making key business policies including production location decisions. Top institution leaders make market-focused business decisions to keep the company successful and growing with

increased profits. The institution uses a modern cost accounting system because it provides essential tools to take smart decisions properly when needed. (Yassin, 2010: 58).

**The Role of Information Technology in The Decision-Making Process**

Technology contributes to accelerating the decision-making process and improving its effectiveness by providing accurate and timely information. This role can be summarized as follows:

- **Decision-making process:** A largely administrative process that takes place at all administrative levels and by all managers and employees concerned with the jobs that require decision-making. It is the process of comparing between a group of alternatives available to the decision-maker to choose one of them to achieve a specific goal. As for the decision, it is produced by transforming the information into a new material with different dimensions, atmosphere, and theoretical and applied meanings, and aims to solve a problem or implement a proposal (Ibrahim & Anam, 2015: 35). The following figure shows us the stages of the decision-making process, which takes place in four stages, as shown in the figure:

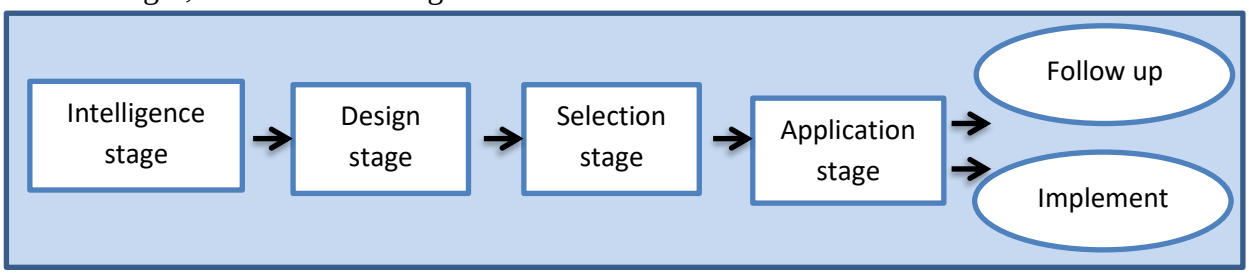


**Figure 1.** Stages of the decision-making process
*Source: Riex, R. (2011). Systems information et management des organization. Paris: Vuibert*

- **Information and decision-making:** Information is considered the material of administrative decisions, so its availability in the appropriate quantity and quality and at the appropriate time represents the backbone of decision-making. The ability to make successful decisions increases as the quality of information increases. Therefore, the quality of decisions taken at all administrative levels depends on the availability of available information (Al-Eryani, 2019: 65).

  Different factors in this analysis support one another. The development of technology shifts our cost management systems and influences how top leaders make business choices. New technology provides direct benefits to managers when they need to make choices.

## 4. FIELDWORK PERSPECTIVE

### An Overview of the General Company for Electrical Industries, The Research Sample

After Iraq signed its technical cooperation deal with the Soviet Union in 1959 the Economic Corporation started the General Company for Electrical Industries. The General Company for Electrical Appliances and Equipment received its business license on 108,000 square meter land with an investment total of 285,653,000 dinars. Operations at the business complex started on April 28, 1967. The document shows that the organization needs to produce items according to the partnership pact. Our main goal involves contributing to national production of electrical appliances and equipment both for home and professional use as defined by development plans and business objectives.

### Description Sample

### Gender

The information in Table Number One shows males represented 70% of total participants and females made up 30%.

**Table 1.** Gender

| Details | Number | Percentage (%) |
|---|---|---|
| Male | 42 | 70 |
| Female | 18 | 30 |
| **Total** | **60** | **100** |

### Age

Table 2 shows that only 20% of the participants are younger than 25 years old while 26.7% are between 25 to 35 years old. Moreover, 30% of the members are aged between 35 to 45 and 23.3% are above 45.

**Table 2.** Age

| The details | Number | Percentage (%) |
|---|---|---|
| Less than 25 years old | 12 | 20 |
| From 25 to 35 years | 16 | 26.7 |
| From 35 to 45 years | 18 | 30 |
| More than 45 years old | 14 | 23.3 |
| **Total** | **60** | **100** |

### Academic achievement

Researchers found that half of their selected study subjects hold a bachelor's degree while the remaining subjects share a combined total of 45 percent between master's and doctoral degrees along with 25 percent who do not fit these categories.

**Table 3.** Academic achievement

| The details | Number | Percentage (%) |
|---|---|---|
| Bachelor's degree | 30 | 50 |
| Master's | 9 | 15 |
| Ph.D | 6 | 10 |
| Other | 15 | 25 |
| **Total** | **60** | **100** |

**Study Tool**

To conduct this research, the researcher developed a questionnaire divided into three sections relating to technological development cost accounting systems and administrative decisions.

**Testing The Stability of the Scale**

The questionnaire must show consistency in results when measuring the same participants repeatedly. When we repeat the survey on the same group of participants it provides the same measurement outcome. The researcher evaluated the test's reliability by using Cronbach's alpha value.

**Testing The Stability of the Scale**

The questionnaire produces similar results each time researchers use it and shows consistency throughout. When reapplying the test to the original sample we will always receive a single outcome. Using the Cronbach's alpha method, the researcher assessed the stability of their created tool.

**Table 4.** Reliability coefficients for the study measures according to the Cronbach's alpha method

| Variables | Number of questions | Alpha coefficient |
|---|---|---|
| The first axis: technological development | 10 | 0.843 |
| The second axis: cost accounting methods | 10 | 0.869 |
| The third axis: administrative decisions | 10 | 0.830 |
| **Total** | **30** | **0.946** |

from Table .4 presents that the overall reliability coefficient values for the study axes are high, reaching (0.946) for the total questionnaire items, which were (30) items, while the reliability coefficient values for the first axis reached (0.843), while the degree of reliability coefficient values for the second axis reached (0.869), and the degree of reliability coefficient values for the third axis reached (0.830), and this indicates that the questionnaire

has a high degree of reliability that can be relied upon in field application. The study team used the Nunley scale to find (0.7) as its lowest needed reliability standard.

**Analyzing Data and Testing Hypotheses**

The research used statistical findings to address both how technology affects cost accounting methods and administrative choices and how cost accounting impacts decision-making processes.

- **Testing correlation hypotheses**

  To testing the hypotheses of the correlation among the variables, as shown in table.5, the research checks if technological expansion links to cost accounting methods and to administrative choices separately and how cost accounting methods influence administrative actions.

**Table 5.** Correlation analysis

| **Correlations** | | | | |
|---|---|---|---|---|
| Cost accounting methods | Technological development | Administrative decisions | | |
| .885** | .861** | 1 | Pearson Correlation | Administrative decisions |
| .000 | .000 | | Sig. (2-tailed) | |
| 60 | 60 | 60 | N | |
| .889** | 1 | .861** | Pearson Correlation | Technological development |
| .000 | | .000 | Sig. (2-tailed) | |
| 60 | 60 | 60 | N | |
| 1 | .889** | .885** | Pearson Correlation | Cost accounting methods |
| | .000 | .000 | Sig. (2-tailed) | |
| 60 | 60 | 60 | N | |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | |

The statistical results indicate that technological development and cost accounting methods relate positively in a strong significant way. The first correlation hypothesis becomes valid. The connection between technological development and administrative decisions has proven to be direct and statistically significant since it yielded (0.861) with (0.000) values. The study confirms a positive direct link between cost accounting methods and administrative decisions because we found (0.885) of correlation strength with (0.000) level of significance.

- **Testing regression hypotheses**

Testing the hypotheses of influence between the study variables, the regression find determine if technological development affects the use of cost accounting methods as shown below:

**Table 6.** Regression results

| Variables | B | T | Sig. |
|---|---|---|---|
| Fixed limit | 0.435 | 1.669 | 0.100 |
| Technological development | 0.896 | 14.774 | 0.000 |
| F test value)) | 218.28 | Probability value | 0.000 |
| Coefficient of determination (R2) | 0.790 | Adjusted coefficient of determination (R2) | 0.786 |
| Durbin-Watson | | 2.125 | |

The results from our statistical model validate its use for testing as the F-statistic value is lower than 0.05 and stands at 0.000. The rendering of (2.125) Durbin-Watson exceeded the (79%) value of R-squared. Our statistical results show no evidence of autocorrelation because the Durbin-Watson value exceeded R-Square. As for... The independent variable explains (79% of the changes) in the dependent variable with a high level of accuracy. The model predicts 79% with random errors from testing sample accuracy plus measuring unit precision. Other unaccounted influences make up the remaining 21 %. **Therefore, there is a significant impact of technological development on cost accounting methods.**

- **Interpretation of the result of the first main hypothesis**

The results in Table 6 shows that technological development produces a strong effect on cost accounting methods because the probability value (Sig.) appears below (0.05) at (0.000).

**The simple linear regression equation can be represented as follows**:

$$\boldsymbol{Y = 0.435 + 0.896X1}$$

Whereas:

Y: Cost accounting methods.

X1: Technological development.

- **The second main hypothesis: There is a significant impact of technological development on administrative decisions.**
- **The third main hypothesis: There is a significant impact of cost accounting methods on administrative decisions.**

Our study employed multiple linear regression to analyze the connections of new technologies and cost accounting practices to official decision-making processes.

**Table 7.** Multiple linear regression results

| Variables | B | T | Sig. |
|---|---|---|---|
| Fixed limit | 0.978 | 4.489 | 0.000 |
| Technological development | 0.302 | 2.789 | 0.007 |
| Cost accounting methods | 0.487 | 4.539 | 0.000 |
| Test value (F) | 121.192 | Probability value | 0.000 |
| Coefficient of determination (R2) | 0.810 | Adjusted coefficient of determination (R2) | 0.803 |
| **Durbin-Watson** | | **1.662** | |

The statistical model shows testing validity because our (F-statistic) result of (0.000) is less than (0.05). The Durbin-Watson value stands at 1.662 with a result greater than the R-squared value of 81%. There exists no autocorrelation because the relationship stands. Our results are reliable and free of red herring issues. As for... The variables explain 81% of how the independent and mediator affect the dependent variable based on (R-squared) values. Our analysis also shows that the variables affect the dependent by 80% according to (Adjusted R-squared) values. Other data aspects outside the model plus random measurement errors account for 20% of the total findings.

**Interpretation of the result of the second main hypothesis.**

The equations demonstrate technological development impacts administrative choices because the significance value (0.007) falls below 0.05.

**Interpretation of the result of the third main hypothesis.**

Table Number 7 indicates that cost accounting methods contribute significantly toward administrative decisions since their probability level falls below 0.000.

**The multiple linear regression equation can be represented as follows:**

$$\boldsymbol{Y = 0.978 + 0.302X1 + 0.487X2}$$

Whereas:

Y: Administrative decisions.

X1: Technological development.

:X2 Cost accounting methods.

After presenting the applied aspects, we clearly understood that making the right decisions is done through the correct application of advanced electronic systems to

evaluate and improve the company's cost accounting methods by providing timely financial and non-financial accounting information for making decisions, which helps management solve and confront emerging problems and strive to get rid of decisions that do not add value and bring additional costs to the factory, and this is what proves the basis and validity of the three basic hypotheses of the study.

## 5. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

The integration of technological advancements into cost accounting methods has become increasingly essential in enhancing the effectiveness and efficiency of accounting systems. Keeping pace with technological progress—particularly through the use of modern computers and advanced programming applications—enables organizations to optimize the implementation of contemporary information systems, ultimately supporting the generation of more accurate and timely decisions. Accountants operating within electronic systems are now required to possess strong computer skills, especially in the application of cost accounting techniques, as many processes that once required manual effort are now automated, reducing the need for a large workforce. Moreover, the application of technological tools in cost accounting has significantly improved the transformation of various inputs into accurate and useful outputs, thus aiding in future-oriented decision-making and saving valuable time and resources. Therefore, staying abreast of innovations in cost accounting practices is vital to enhancing work quality, operational efficiency, and the overall reliability of financial decisions.

### Recommendations

The General Company for Electrical Industries has taken proactive steps to enhance its workforce's capabilities by educating employees on modern electronic cost accounting through various program activities and software tools. In today's fast-paced business environment, it is imperative for companies to integrate up-to-date technology and electronic systems alongside modern financial methods to support efficient and smart decision-making processes. This transformation not only improves operational efficiency but also demands a workforce that is enthusiastic about exploring and utilizing emerging information technologies. Accountants, in particular, must stay aligned with technological advancements, as the rapid evolution of economic activities has made the use of advanced digital tools an essential component of contemporary accounting practices.

## REFERENCES

Ababsa, A., Al-Saleh, M., & Yahya, N. (2017). *Accounting for the costs of contracting activity and its role in decision-making* (Master's thesis, Martyr Hamma University in Al-Khader, Al-Wadi).

Abdel Aleem, N. I. (1994). An approach to cost measurement based on specifications and its role in rationalizing the decision-making process. *Journal of Financial and Commercial Studies,* (9), Faculty of Commerce, Beni Suef - Cairo University.

Abdel Nasser, I. N., & Al-Sharif, A. (2006). *Industrial cost accounting*. Dar Al-Masirah for Publishing and Distribution.

Abdel Wahed, D. I., & Baqia Inam, A. M. (2015). *Decision theory, quantitative models and methods*. Wael Publishing House.

Abu Al-Hassan, A. A., & Al-Dahrawi, K. M. (2002). *Cost accounting for planning and control purposes*. New University House.

Abu Shanab, J. (1999). *Science and technology from the beginning until now*. University Knowledge House.

Ahmed, H. (2010). A comparative study between traditional costing methods and the activity-based cost accounting method (Master's thesis). University of Algiers 3.

Al-Eryani, A. Y. (2019). *Decision support systems*. Dar Osama for Publishing and Distribution.

Al-Rubaie, J., & Hassan, K. (2010). *Advanced cost accounting*. Dar Wael for Publishing and Distribution.

Al-Sheikh, I. Y. (2008). *Cost accounting*. Ithra Publishing and Distribution House.

Al-Sulaiman, H. Y. M. (2022). The effects of the use of information technology on accounting systems. *Arab Journal of International Publishing, 5*(50), 355–364.

Al-Takriti, I. Y. (2006). *Cost accounting from theory to application*. Dar Hamed for Publishing and Distribution.

Al-Tantawi, H. A. A., & Ibrahim, H. E. S. (2023). The impact of artificial intelligence technology in improving the effectiveness of the role of forensic accounting methods in combating corruption: A field study. *Trade and Finance, 43*(2), 117–189.

Amir, R., & Trevi. (2024). The impact of cloud computing on the objectives and components of cost accounting. *Journal of Financial and Business Studies, 34*(2), 394–413.

Bhimani, A., & Horngren, C. T. (2015). *Management and cost accounting* (Vol. 1). Pearson Education.

Bhimani, A., Datar, S. M., Horngren, C. T., & Rajan, M. V. (2019). *Management and cost accounting*. Pearson Higher Education.

Bin Hajouba, H. (2021). The role of information technology in achieving competitive advantage for small and medium enterprises and improving their performance. *Journal of Studies in Economics and Business Administration*, 402.

Darahmoun, & Hilal. (2005). *Analytical accounting: An information system for management and an aid to decision-making in the economic institution* (Doctoral dissertation, University of Algiers 3).

Datar, S. M., & Rajan, M. V. (2018). *Horngren's cost accounting: A managerial emphasis* (16th ed.). Pearson.

Di Leandro Torres, G., & Soares, C. A. P. (2013). MixBC method: A new approach for distribution of indirect costs and expenses to products. *International Journal of Engineering and Technology (IJET), 5*(1), Fob–Mar.

Ghaleb, Y. S. (2009). *Fundamentals of management information systems and information technology*. Dar Al-Manhaj for Publishing and Distribution.

Guan, L., Hansen, D. R., & Mowen, M. M. (2009). *Cost management* (6th ed.). South-Western Cengage Learning.

Hilton, R. W., & Platt, D. E. (2017). *Managerial accounting: Creating value in a dynamic business environment*. McGraw-Hill.

Krishan, K. M. (2013). The impact of the use of information technology in increasing the efficiency of modern management accounting tools (Master's thesis). Amman Arab University.

Labidi, G., & Ben Toumi, A. S. (2022). The impact of the enterprise resource planning system (ERP) on the performance of the organization (Doctoral dissertation, Muhammad Al-Bashir Al-Ibrahimi University).

Nour, A. (1999). *Principles of industrial cost accounting*. University House.

Riex, R. (2011). *Systèmes d'information et management des organisation*. Vuibert.

Salemi, Y. (2010). Modern methods of calculating costs and making decisions in the organization: A case study of the Petroleum Corporation, GPL Blida branch.

Szychta, A. (2010). Time-driven activity-based costing in service industries. *Social Sciences, 67*(1).

Whitecotton, S., Libby, R., & Phillips, F. (2020). *Managerial accounting*. McGraw-Hill.

Yaqoub, F. A., & Bejay, I. R. (2017). Designing an ABC activity-based costing system for transportation services and its role in improving the efficiency of pricing decisions: Applied research at the General Organization for Private Transport Management. *Journal of Accounting and Financial Studies, 12*(41), 4.