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The Impact of Blockchain Technology and Big Data on Strategic Cost Management and Accountants' Skills in the Iraqi Technological Environment

Asaad Sasaa Agrab[1*], **Yosra Makney Fourati**[2]

[1]Chemical Engineering Department, Engineering College, Al-Qadisiya University, Iraq; asaad.saad@qu.edu.iq (A.S.A.).
[2]Faculty of Economics and Management, University of Sfax, Tunisia, GFC, Faculty of Economics and Management of Sfax, Tunisia; Yosra.makni@fsegs.usf.tn (Y.M.F.).

Abstract. Blockchain technology and big data have transformed accounting and strategic cost management in Iraq's rapidly developing technological environment. Blockchain technology provides transparency, security, and the ability to track accounting records, which greatly improves financial statements and enables more accurate and real-time cost tracking and resource allocation. Block Chain certification requires accountants to learn digital ledger management, smart contracts, and decentralized finance system compliance, as well as big data analytics to analyses large data sets, identify cost-saving opportunities, and predict strategic trends. These advances require ongoing learning and adaptation to technologies, as well as data privacy and system security. The study examines how technological advances affect accounting and cost management methods, particularly in Iraq's economic and technological context. The study's main findings were that blockchain technology collects data and information on all transactions within time-series blocks, forming a chain called the blockchain, each of which contains information related to the previous block, making it impossible to modify any block without modifying the entire chain, and big data is an important stage of information and communication development.

Keywords: Accountants' skills, Big Data, Blockchain, Strategic cost management.

1. INTRODUCTION

Since the end of the last century and the beginning of this millennium, technology, information technology, and huge data packages have made huge and wide developments in all fields, especially economic and financial activities, improving human capabilities and doubling activities to record levels. The world is still seeing new developments, especially with the emergence of One of these technologies, which represents a new challenge in the field of information technology, has huge capabilities and wide participation for all users, just like the Internet, but may be more private, independent, and secure. It may be the most used and widespread soon, especially in economic activities, commercial and financial transactions, capital markets, and securities exchanges. And the rise of cryptocurrencies like Bitcoin and other digital currencies that more countries and people want to use for business and finance.

However, financial systems face major challenges in adopting the best accounting practices to provide credible and transparent financial information, and the accountant profession faces challenges in adapting to rapid environmental changes and developing itself and its affiliates' skills to play their role efficiently and professionally. Accounting, like other professions, evolves and adapts to the needs of the environment, especially the technological environment that benefits from unprecedented development. This study examines how technological transformations, particularly those related to blockchain and big data, affect strategic cost management and its ability to reduce costs and improve performance

2. RESEARCH METHODOLOGY

The research methodology for the study includes both the presentation of the study problem, its objectives, importance, hypotheses, hypothetical model, the scientific method followed, the sources of data collection and its spatial and temporal limits, and the methodological framework of the study can be clarified through the following:

2.1. View The Study Problem

The study examines how blockchain and big data effect strategic cost management and accountant abilities in Iraq's technological environment. Using these methods to improve accountants' skills in Iraq's technology environment is difficult.

These technologies can revolutionize financial operations and decision-making, but their acceptance and implementation in Iraq confront several challenges. The study's focus is on the following questions:

1. What are the obstacles to implementing blockchain technology and big data analytics for cost control in Iraqi businesses?
2. How can Iraqi organizations utilize blockchain and big data analytics to enhance efficiency and transparency in cost management?
3. The paper examines how technological improvements impact accounting and cost management procedures in

* Correspondence: asaad.saad@qu.edu.iq

Iraq, considering its unique economic and technological situations.
4. What are the skills needs for accountants in Iraq in blockchain and big data analytics?
5. How can Iraqi accountants improve their skills to use blockchain technology and big data analytics effectively?

2.2. Objectives of the Study

Blockchain and big data will be examined to discover how they affect cost management and accountant performance, efficiency, and abilities in Iraq.

1. Investigating the influence of blockchain and big data analytics on cost control in Iraqi businesses.
2. Identify key technology developments in Iraq for utilizing blockchain and big data for cost management.
3. Assess technological data for finance and accounting systems in Iraq for blockchain and big data applications.
4. Determine obstacles to adopting blockchain technology and big data analytics for cost management in Iraqi organizations.
5. Evaluate accountant proficiency in blockchain and big data analytics in Iraq to create a training program to address skills gaps and maximize benefits.

2.3. The Importance of the Study

1. This study is important because it is a new study that researchers have not addressed in depth or studied with an analysis related to the financial and accounting fields, especially in Iraq, as it is still a field of research in developed countries and is considered the latest contemporary trends in information technology and technology, and to identify ways and means to decrease the efficiency and skills of Iraqi accountants. This study addresses important issues related to the integration of blockchain technology (Block Chain) and Big Data in cost management and raising the efficiency and skills of accountants in Iraq. The results and recommendations of this study can have significant effects on the accounting profession for companies with large transactions and all Iraqi banks as they modernize financial practices and adapt to the changing technological landscape. By exploring the challenges and opportunities of blockchain technology and big data, this study could help Iraq's resource-constrained economies leverage emerging technologies and serve as a model for other regions facing similar challenges in adopting advanced technologies in their financial and accounting operations.
2. This paper addresses how Block Chain and big data effect strategic cost management and accountants' growing position in the Iraqi technological environment, encompassing the following important areas:
3. The study highlights the potential for blockchain technology and big data to enhance cost management tactics through transparency, accuracy, and efficiency. This can improve financial management, especially in Iraq's changing economy.
4. 2. The report emphasizes the necessity for Iraqi accountants to adopt modern technologies. Blockchain technologies and big data are changing accounting procedures, requiring accountants to learn advanced data analysis and digital literacy to stay competitive.

2.4. Study Hypotheses

The study is based on a set of hypotheses, which have been divided into three sections, namely variance hypotheses, correlation hypotheses and effect hypotheses, and these hypotheses are as follows:

Hypothesis One: There is no statistically significant effect of blockchain technology on the strategic cost management variable:

Second hypothesis: There is no statistically significant effect of blockchain technology on the variable of accountants' skills in the technological environment.

Hypothesis III: There is no statistically significant effect of big data technology in the strategic cost management variable

Fourth hypothesis: There is no statistically significant effect of big data technology on the variable of accountants' skills in the technological environment.

2.5. Theoretical Framework of Research

2.5.1. The Concept of Blockchain Technology

The first roots of blockchain technology date back to 2008 when Satoshi Nakamot introduced Bitcoin as a new peer-to-peer-to- peer electronic cash idea based on blockchain technology (Tobia, 34 pp., 2020).

2.5.2. The Researchers Cited Several Definitions of Blockchain Technology

Defined as an immutable ledger that collects and stores a set of records in a block Each block is created using cryptographic hashing functions and is connected in a chain form (Mohammed Shuaib, 2022, p3), as defined as a technique for storing and verifying transaction records that works by adding blocks of data to the ledger, which

are maintained over a network of peer- to-peer computers (951, page 2021, Tatiana). Garanina and Mikko Ranta).

2.5.3. Advantages of Applying Blockchain Technology and Its Characteristics

Blockchain technology as a new technological system works on processing and storing data or a large amount of data more clearly, in addition to its work to save data from penetration, hacking and piracy, in addition to the above, there are a set of other advantages that blockchain technology specializes in as follows:

2.6. Advantages of Using Blockchain Technology

The characteristics of blockchain technology are among its general advantages, in addition to that, there are a number of other advantages, which are as follows:

Transfer of file origin:

The main goal of the blockchain is to transfer the origin of the thing to the other party via the Internet, what always happens is to transfer a copy of the file, not the transfer of the original file, meaning when sending an email or file over the Internet, what happens is to send a copy of the file or information about the first party to the second party, with the possibility of the first party to keep the original, (Don Tapscott, p27,2016).

2.6.1. Protection of the Transaction from Manipulation

Blockchain is characterized by an important feature, which is to ensure that there is no fraud or fraud during the execution of transactions made through "blockchain" and the promise of manipulating transactions after their completion, (Blockchain Technology, p5, 2018) as seen by (Al-Shater, 128 pp., 2019) Blockchain technology offers a number of advantages such as transparency of transactions, the inability to modify the data stored on the chain, and the ability to review all transactions that It was done on the series at the same moment it happened

2.6.2. Characteristics of Blockchain Technology

There are a number of characteristics that characterize blockchain, and the definition of (Don Tapscott and Alex Tapscott, p23,2016) has referred to them briefly as digital and technology that enjoys security and transparency and is not managed by an intermediary, but directly, in addition to the low cost element, in addition to that, there are a number of other characteristics represented in the following:

1. It is a database: or open registry, as it allows all its users, whether public or private, to record and manage their data and information. It is a distributed registry: a decentralized network where it is distributed to all the users' devices connected to the network, which is known as nodes, that is, a copy of the data and information stored on the network, making it - compared to traditional databases that are controlled by a central intermediary - more secure.
2. Mining: As a mechanism on which (blockchain) technology depends, it is intended to verify the validity of the «hash», that is, the correct code characteristic of the operation to be performed by performing a set of complex calculations across millions of computers for users of this technology, who are known as prospectors or miners, where these prospectors perform complex mathematical operations to obtain a block hash code (Yves Poullet et Hervé Jacquemin, p3-8,2018).

2.6.3. Components of Blockchain Technology

As previously indicated, blockchain technology is an integrated system for dealing with data consisting of a chain of blocks, and therefore this technology consists of a number of elements, represented in the following (Darwish, Al-Jakhlab, 4 p., 2021 AD):

1. Block: Such as a chain building unit, which is the sum of the operations to be performed within the chain, such as recording data, transferring money, or following up on a transaction ... and others.
2. Hash: It is the DNA of each block, also called a digital signature, which is a small encrypted piece of data added to an electronic message such as an email.
3. Information: It is a subprocess that takes place within a single block, and also represents the "individual command" that takes place within the block.

Time: It is the time at which any operation is performed within the chains.

Types of blockchain technology and obstacles to its application:

It was previously mentioned that blockchain is a new advanced technology based on the development of data and information as blocks or nodes leading to each other, and when designing blockchain technology in the technological environment, it was necessary to take into account the different types of projects and various companies that will apply this technology, hence the different types of blockchain:

2.6.4. Types of Blockchain Technology

There are a number of types into which blockchain technology is classified, and (Mustapha Mekki, p5, 2020) has classified them into the following:

1. Public blockchain: It is an open network for all across borders, does not need a license and anyone can join it and conduct financial transactions without restrictions, and most types of cryptocurrencies work on it as governed by compliance rules or algorithms; it is neutral where there is only a "valid" or invalid transaction regardless of whether it is legal or good, the researcher believes that although this type of blockchain technology will make it easier for multinational companies and projects to deal with Blockchain technology at the level of its various branches, but it may have a breach of the security base and the problem related to manipulations of electronic currencies may have arisen from here .
2. Private blockchain: A closed network that operates in a restricted environment limited to authorized participants only, as it is controlled by a specific entity that determines who is allowed to join it.
3. Hybrid blockchain: A type that combines public and private blockchain elements, allowing organizations to set up a special permission-based system alongside a public system without permission.
4. Federal blockchain: It is a network whose platform is shared by several organizations, who have the responsibility to determine who is allowed to access data or make transactions, as it is not a public platform, but an authorized platform, making it more suitable for business (Puthal, et.al., 2018) as follows:
5. Public blockchain: Which provides an open system for people from different organizations to join , and there is no restriction on any of this feature, so that it provides a copy of the entire blockchain and is available to everyone and is immutable.
6. Specific blockchain: It is a private and partial chain that is partially allowed, so that no single organization is responsible for the block validation mechanism, and this block can be part of the network and its validity can only be verified by the members of the block located inside and is therefore a partial centralized system .
7. Private blockchain: Adopted to facilitate the sharing and exchange of private data between a group of individuals (in a single organization) or between multiple organizations, so that anonymous users can only access it if they receive a private invitation.

3. KNOWLEDGE FOUNDATIONS OF BIG DATA TECHNOLOGY

3.1. The Concept of Big Data

The era of big data is the era following the age of information and communication technology, as it began in 1971, and the British government has identified in 2012 that big data is one of eight great future technologies, that the current business environment has witnessed fundamental and continuous changes as a result of great technological developments that have affected the nature of the work of various establishments and brought new challenges and effects to the accounting profession, which prompted business organizations to think about how to use these technologies and benefit from them as a good tool To provide and communicate information to its users (Abdel Ghaffar 15, 2021)

3.2. The Researchers Cited Several Definitions of Big Data

The term big data refers mainly to the many data that are generated, stored and analyzed by modern techniques to exploit information flows, through which companies can learn about the places of opportunities and power of the company and for the purposes of assistance and improvement of decision-making, in the era of big data, data is a new business asset that can change the global economy and bring about an information revolution in it, and big data includes stock market transactions, risk assessment data from competitors, and behavior data Customers and structured and unstructured data including numbers, text, images, audio, videos, information and social media (Wang, 2021), although there are many definitions of big data, there is a definition that may be considered unified for big data and is internationally recognized which is the definition of the International Organization for Standardization (IOS 2017)) is a collection of data that has its own unique characteristics such as size, speed, contrast, credibility and validity of data, diversity, and cannot be efficiently processed using traditional technology to take advantage of it.

3.3. Characteristics of Big Data

Big data is characterized by a number of characteristics, and has been referred to (Al-Hassan, 36 pp., 2022 AD, Osman, 2018, p21) as:

1. Size: It refers to the large volume of data that is growing rapidly, and also refers to the amount generated from data that reaches a huge number of data that determines its size and value, and as a result it needs large processors and devices capable of dealing with it.
2. Speed: refers to the speed of data generation, data collection , mining and analysis requires that it be managed quickly in order to obtain full use of the importance of that data, and the processing of a set of data in a reasonable period of time.
3. Diversity: It means the multiplicity of forms of data that come from different sources, whether structured or not, and can be analyzed with various tools , and structured data represents a lower percentage and

unstructured data a larger percentage, in addition to a mixture between the two called semi-structured data.

4. Value: The production of useful outputs is not only through data analysis because data collection and storage does not mean anything, but what makes it important are the systems that allow the processing of idle data and its conversion into information that creates added value (p43,2022, Turhan), and (Yunus, 129-130) has added to the previous characteristics a number of other characteristics represented in the following are reliability, with great value Multi-aspect variable value He added (Hafez, 41p, 2017) Volatility: This property refers to the inconsistency that data can exhibit at times, which hinders the ability to handle and manage data effectively.

The following figure illustrates the distinctive characteristics of big data.

Figure 1: Big data properties.
Source: (Al-Hassan, 36 pp., 2022, Osman, 2018, p21, p43,2022, Turhan, Yunus, 129-130 pp., Hafez, 41 p., 2017, Hafez, 41 p.,2017).

3.3.1. Types And Sources of Big Data

Many studies have pointed to the sources from which big data and its types are obtained, and it has been classified by (Souza et al., 2020, p70) as follows:

Structured data: It is data organized in the form of tables or databases to prepare for processing.

Unstructured data: This data constitutes the largest percentage generated daily from text writings, images, messages, videos and clicks on websites.

Semi-structured data: It is considered a type of structured data, but this data is not designed in tables or databases, but these data are issued by a governmental or non-governmental program and originate from internal and external sources and are contained as follows:

Internal sources: such as data issued by various departments, sections and workers in various activities such as invoices, incoming purchase orders or issued checks, sales figures that are recorded in the form of reports, observations and recorded discussions or issued by internal systems such as enterprise resource planning (ERB) systems, Internet of Things systems and their applications (IOT), artificial intelligence systems (Intelligence Artificial) and other systems that own physical and electronic devices.

External sources: These sources that the company does not have, but they are affected and influenced, including Internet networks, market data, data provided by social media or through customers, suppliers and various organizations from the market.

3.3.2. Big Data Parties and Obstacles to Their Application

3.3.2.1. One of the Characteristics of Big Data

1. Predictive Analysis: This analysis aims to help business organizations have a greater understanding of the nature of organizations or a deeper understanding of their customers in terms of their needs and

preferences and predict them whenever possible by answering the question (what can happen in the future?) and this is done through the method of data mining, multiple regression analysis and neural networks, etc.

2. Heuristic analysis: It is an advanced analysis that tries to answer the question (what should be done ?) to find one or more solutions to the accounting problem in light of the results of descriptive and predictive analyses?, as these analyses exceed the capacity of descriptive and predictive analyses through their ability to develop one or more solutions to accounting problems and present the possible results of each .

3.3.3. Strategic Cost Management and Techniques

3.3.3.1. Strategic Cost Management Concept

Strategic cost management is one of the new entrances in the field of strategic orientation, which provides information that helps management to achieve an increase in profits and strengthen the competitive position in the long term for economic units and includes the entrance to cost management a set of tools that may be used one of them alone to support a specific decision or may be used together to support the administrative process as a whole of the economic unit when planning and controlling the costs of activities associated with achieving profits in the short term Strengthening competitiveness through long-term strategies (Zoroub, 40 p., 2013).

3.3.4. The Researchers Cited Several Definitions of Strategic Cost Management

Cost management according to its strategic perspective is a set of modern technologies that help economic units in facing the challenges witnessed by the contemporary business environment through cost management by reducing it while maintaining product quality and thus achieving a competitive advantage (Al-Mahna, p. 21, 2020), as defined as management practices that Through which it aims to analyze the structure of the company's costs and study them in order to distinguish the relationship of value activities in terms of cost and management in order to reach efficiency in production and the lowest costs while maintaining quality in order to achieve competitive advantage (Ben Brika and Bakroun, 152 pp., 2017), and based on the above, the researcher defines strategic cost management as a modern trend of commissioning systems based on the holistic view that It takes into account all the variables at the internal and external levels of companies that affect their costs, which is based on achieving the strategic goal of cost, which consists of a set of techniques that help determine the appropriate cost of production and get rid of additional costs in order to achieve control, planning and optimal selection of production costs and help in taking Various management decisions that help companies achieve a distinguished position among competitors in the markets.

3.3.5. Motives For Switching to Strategic Cost Management

The motives for switching to strategic cost management can be illustrated through the following:

1. Environmental complexity and uncertainty: Environmental variables surrounding economic units have become complex and complex.(Hammad, 63 pp., 2003).
2. Lack of control over pricing: The selling price of the good or service has become determined in difficult circumstances that cannot be controlled by the economic unit, so it becomes an influential role that cost management can play efficiently in order to achieve competitive advantage, provided that this is done within a specific strategic framework in order to provide final value to the consumer, which is a strategic goal that is done through the integration of activities from the beginning of the product design to the stage of selling it in the market.
3. Lack of market control : Considering the markets of the countries of the world as a single market available to all producers and consumers, led to an increase in competition between entire economic units so that competition is no longer limited to competition at the local and regional levels, but has expanded and increased to foreign economic units at the global level.(Al-Mahmoud and Rizk, 1-2 p., 2003).
4. The continuous change in consumer desires: The short life cycle of products needs attention to search for the requirements and desires of customers and satisfy them continuously is the main goal that economic units aim to achieve wherever they are (Talib, 574 pp., 2017).

3.3.6. Strategic Cost Management Objectives

Strategic cost management seeks to achieve a number of objectives indicated by a group of researchers as:

1. Focus on the external environment and interact with it in order to identify and respond to customers' renewed desires, monitor cost management performance in the right companies and increase productivity.
2. Focusing on the concept of value chain analysis by improving the strategic activities of the company, as it emphasizes the strategic dimension of cost, and this leads to improving profitability, reducing cost and achieving competitive advantage.
3. Activating the role of senior management in supporting and supporting the achievement of the desired strategic objectives to improve the strategic position of the company (Saleh, 32 pp., 2014).
4. Give a clear picture of deviations that may occur in project costs early in order to provide the opportunity

to take early corrective actions (Brahimieh, 36pp., 2021).

3.3.7. Strategic Cost Management Techniques

The various systems in companies and private cost consist of a number of methods, techniques and subsystems that help these systems in the role entrusted to them to achieve the objectives of measuring and determining the current cost and appropriate costs, as well as the strategic management of the cost, which consists of a number of different techniques and methods that go beyond traditional systems With regard to determining and measuring costs, in addition to the previous costs, it works to determine strategic costs, which enable companies, especially those operating in the technological sector (which are characterized by rapid changes in their environment more than companies operating in other sectors) to achieve competition in the markets in which they operate, as mentioned earlier, and these technologies come as follows:

3.3.8. Strategic Cost Techniques

Strategic cost techniques were defined as that branch of accounting science that deals with methods of determining and allocating product cost, which provides managers with appropriate information for their planning and control in the short and long term, and was also defined as a description of managers' decisions to satisfy consumers by constantly working to reduce the price of the product and control costs (Ahmed, 30 pp., 2017).

3.3.9. Objectives of Cost Management Techniques

1. Good awareness of strategic factors, i.e. analyzing the internal and external environment in order to make decisions regarding certain cost drivers, a certain internal value chain, and a certain internal value chain to put the economic unit in a larger value chain that extends from primary resources to product consumption, enabling the economic unit to build plans and strategies properly and achieve financial and competitive advantages over the short and long period.
2. Provide an appropriate framework for allocating resources between activities, which requires identifying value activities inside and outside the economic unit and measuring the return of each .
3. Identify sources of profitability (products , production lines and consumers) by measuring the strategic cost of units and determining their profitability.
4. Discover opportunities for continuous cost improvement.

4. KNOWLEDGE BASES OF ACCOUNTANTS' SKILLS

4.1. Definition and Classifications of Accounting Skills

Sandifer (2018) defined the accounting skills enjoyed by accountants in general and are classified into two types of accounting skills, basic skills, which include reading, writing, arithmetic, mathematics, speaking and listening skills, and thinking skills include creative thinking and decision-making to solve problems and see things with the eye of the mind and know how to learn and think logically, and there are other skills such as cognitive skills, either (Chaker & Abdullah, 35p,2011) He pointed out that soft skills are those skills related to the ability and attitude possessed by the individual accountant, these skills can be developed to improve personal skills and individual learning, while interpersonal skills are those that enable the accountant to work with others for the benefit of the organization and using these skills the accountant can influence, motivate, resolve conflicts and delegate tasks to his team members to achieve the goals of the organization in order to achieve this.

4.2. Skills to Be Learned in University Education

University education is considered as the first step in learning accounting skills, or it can be said that it is the first preparation for accounting and the outline of his map as an accountant, and he pointed out (Al-Hubaiti, 2003, 11-13 pp.) that accounting education should include the following skills:
Good thinking skills and problem-solving ability.

1. Technical information about the accounting profession, and its sciences such as auditing, taxation, documentation and reporting.
2. Accounting information technologies and systems.

4.3. International Accounting Skills

With the economic development, which imposed on the accounting reality the need for development, the interest of international associations in the accounting profession and the skills that must be possessed by those in charge of it increased.

4.4. Accounting Skills According to the Association of International Accountants

The Association of Accountants has classified the skills that students must have for accounting, which are as

follows:

Cognitive skills: These include the following skills which Clarified by (Muhammad, 200-201 pp., 2016) on They are:

Technical skills: The student must be provided with various technical skills, the most important of which are:

A. Professional knowledge employment skills: are the skills of using accounting programs and information technologies Accounting, the skills of using statistical and mathematical equations used.
B. Professional knowledge skills and their applications: such as the skills of applying accounting theory, accounting measurement skills, professional report writing skills, and budgeting skills.
C- Analytical and constructive skills: represented by the skills of analyzing accounting data and information and classifying them for various purposes, the skills of designing auxiliary accounting systems, designing and analyzing decision models, and analyzing the degree of risk.
D- Evaluation skills: including the skills of preparing estimates in ambiguity situations, decision-making skills, skills of evaluating accounting systems and their outputs, critical thinking skills and accounting problem solving skills.
e. Long-term accounting education skills: require an understanding of the latest developments regarding accounting knowledge and the ability to self-education

2- Behavioral skills: These include the following skills:

A - Personal skills: such as interaction and dialogue, good orientation and skills arranged by the profession of dealing with management, colleagues, suppliers and all those associated with the profession.
In- Skills SocialSuch as communication skills, the ability to communicate information, adapt, motivation, teamwork, asking questions, critical skills and dealing with others.
C- Organization skills: includes building skills and organizational planning.
D- Responsible skills: These include effective work skills, acting responsibly and following the ethical foundations of the profession.

5. IDENTIFICATION OF THE STUDY SAMPLE AND PRESENTATION AND ANALYSIS OF DATA

5.1. An introductory overview of the population and sample of the study

Iraq has a total of 65 banking institutions, however, they contributed only 1.94% of local notifications in 2021.

The current study relied on all banks registered in the Iraqi stock market, as the banks licensed to operate in Iraq consist of (6) six government banks, (41) forty-one private banks, and (18) eighteen foreign banks operating in Iraq, so the total number of banks is (65) sixty-five banks.

For the sample of the study, a group of managers and their assistants, accountants, auditors and financial analysts working in Iraqi banks were selected, and a questionnaire was designed and distributed to them.

5.1.2. Impact Hypothesis Testing

Research hypotheses refer to the initial opinion to solve the problem of the study or a possible answer to the question represented by the problem, and therefore it is a conclusion or temporary interpretation of the problem adheres to the researcher until the hypothesis is tested and validated for the purpose of acceptance or rejection in order to determine the dimensions of the problem accurately, and after the hypotheses of the link were tested in the previous section will be in this section to test the hypotheses of the impact as follows:

5.1.3. Testing the First Main Hypothesis

5.1.3.1. This Hypothesis States the Following

There is no statistically significant effect of blockchain technology on the strategic cost management variable.

For the purpose of confirming and verifying the first main hypothesis, developing a structural equation model to prove or deny this hypothesis, blockchain technology depends on the distributed database in order to eliminate the idea of centralization, where there is no one party or one server and one device that controls the blockchain, but the chain is distributed among all individuals involved in it around the world, where anyone in the world can download, view and participate in the chain, and this principle is considered One of the security elements of the chain, if a hacker wants to manipulate or penetrate the chain, he must breach all the individuals in it, to help analyze the internal and external environments of the economic unit in order to identify the strengths and weaknesses of the internal environment and the corresponding opportunities and threats in the external environment. Figure 14 shows this case, and Table 27 shows the model-specific correlation values that indicate the rejection of the first main hypothesis.

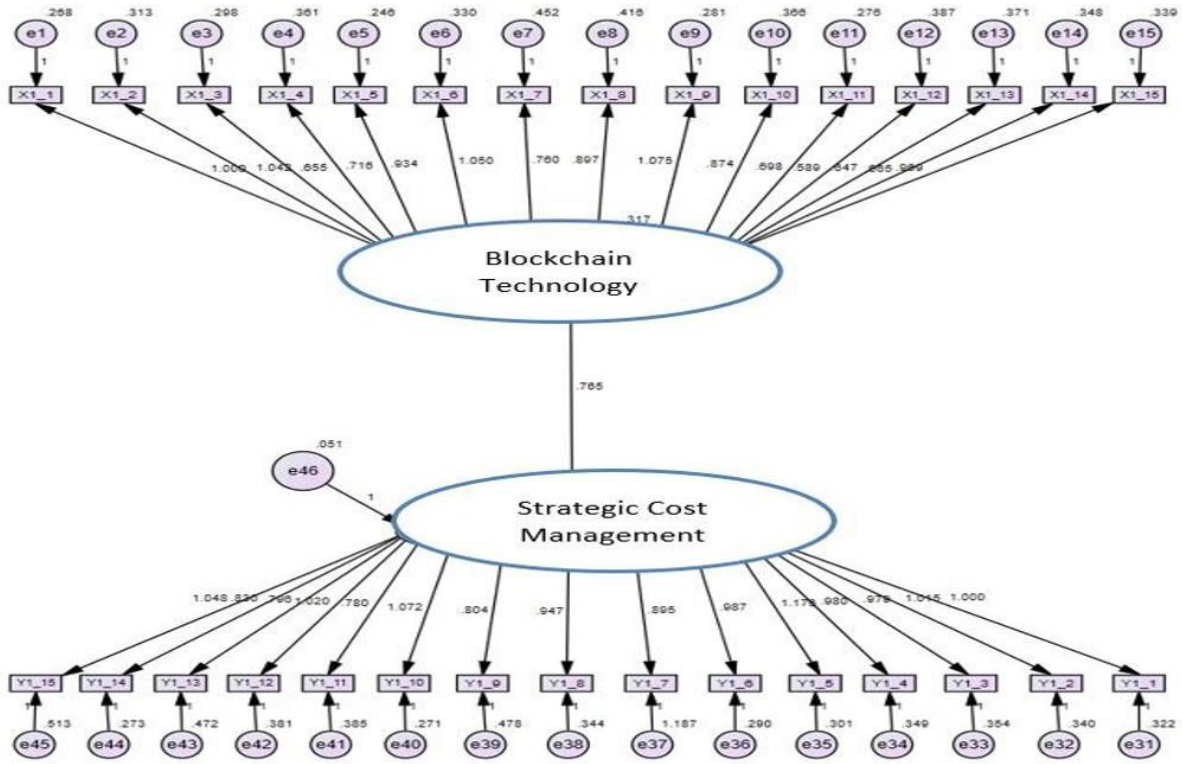

Figure 2: The Impact of Blockchain Technology on Strategic Cost Management.

Table 1: Analysis of the impact of blockchain technology on strategic cost management.

Coefficient of Determination	P-value	Regression Coefficient	Dependent Variable	dependent Variable
78.4%	0.000	0.765	Strategic Cost Management	Blockchain Technology

Where we can see from Table 1 that there is a significant impact of blockchain technology in strategic cost management, because the p-value associated with the value of the regression coefficient is less than the significance level of 0.05 and therefore there is a statistically significant effect of blockchain technology in the strategic cost management variable, as blockchain technology as a new technological system works to process and store data or a large amount of data more clearly in addition to its work to save data from hacking and hacking, The main goal of blockchain is to transfer the origin of the thing to the other party via the Internet, what always happens is to transfer a copy of the file, not the transfer of the original file, meaning when sending an email or file over the Internet, what happens is to send a copy of the file or information about the first party to the second party, with the possibility of the first party to keep the original, which cannot happen when trying to transfer the origin of the thing, as well as the matter in obtaining rights Intellectual property and patents, or the purchase of original files such as original songs and movies that are permanently purchased and acquired, which means that no other party should keep them. Thus, we reject the null hypothesis and accept the alternative in the sense that:

((There is a statistically significant effect of blockchain technology in the strategic cost management variable))

The value of the regression coefficient indicates that this effect is positive and explains more than 78% according to what is clear from the value of the coefficient of determination.

5.1.4. Testing The Second Main Hypothesis

5.1.4.1. This Hypothesis States the Following

There is no statistically significant effect of blockchain technology on the variable of accountants' skills in the technological environment.

For the purpose of verifying and verifying the validity of the second main hypothesis, the structural equation model was developed to prove or deny this hypothesis, and Figure (2) presents this case, and Table 2 Presents the values of the correlation of the model, which indicates the rejection of the second main hypothesis.

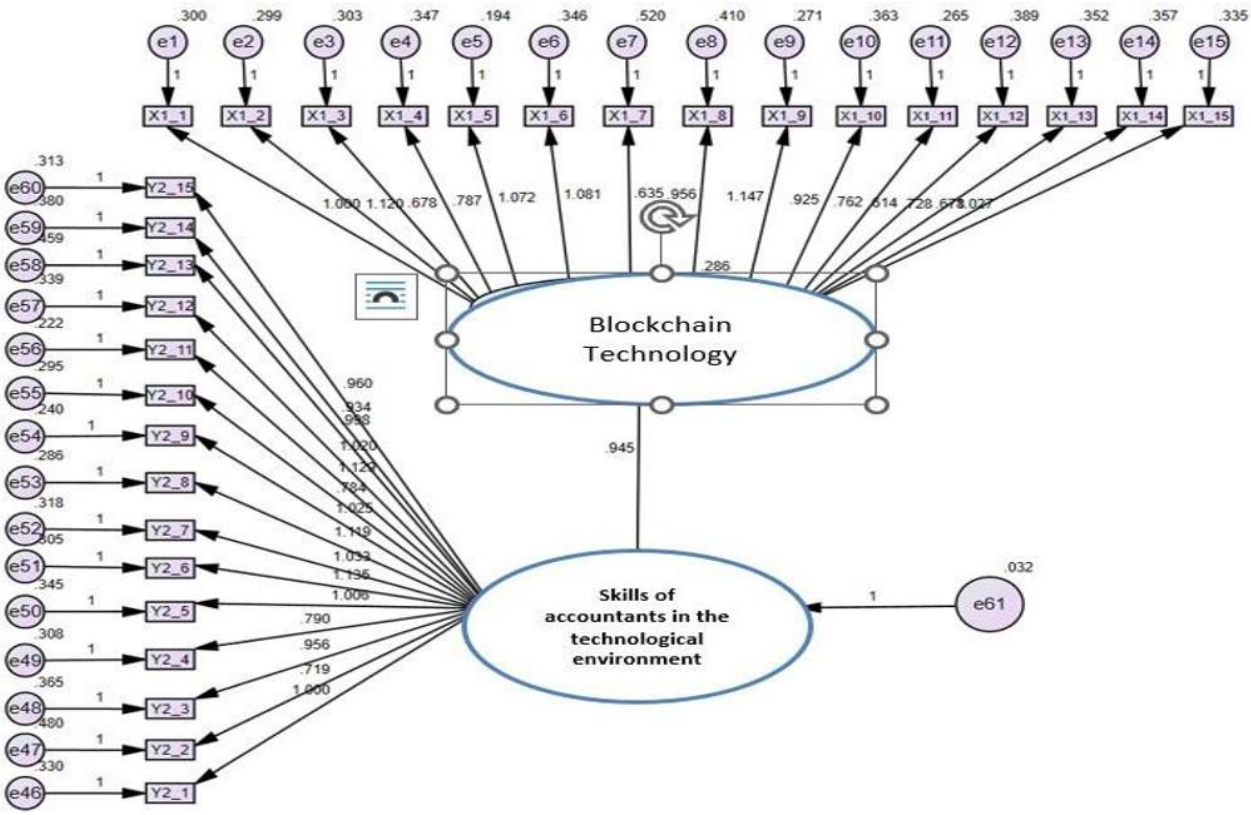

Figure 3: The impact of blockchain technology on accountants' skills in the technological environment.

Table 2: Analysis of the impact of blockchain technology on accountants' skills in the technological environment.

Coefficient of determination	P-value	Regression coefficient	Dependent variable	Independent variable
89%	0.000	0.945	Skills of accountants in the technological environment	Blockchain Technology

Where we note from Table (28) that there is a significant impact of blockchain technology on the skills of accountants in the technological environment, because the p-value associated with the value of the regression coefficient is less than the significance level of 0.05, and therefore it can be said that there is a statistically significant effect of blockchain technology on the variable of accountants' skills in the technological environment, as strategic cost management exercises its role as an information system during the basic stages of strategic management in order to help make decisions and improve performance, and thus It includes four main processes, namely inputs, processing, outputs, and feedback, for inputs it requires identifying the needs and requirements of the customer, as well as determining the goals and strategies of the economic unit, either with regard to processing, it requires a multifunctional team that converts inputs into outputs that help in decision-making, and for outputs, it is related to providing accurate reports related to measuring cost, performance and customer satisfaction, and finally feedback can be seen as measuring the management of the economic unit for its performance Past. Thus, we reject the null hypothesis and accept the alternative in the sense that:

((There is a statistically significant effect of blockchain technology on the variable of accountants' skills in the technological environment))

The value of the regression coefficient indicates that this effect is positive and explains 89% according to what is clear from the value of the coefficient of determination.

5.1.5. Testing the Third Main Hypothesis

5.1.5.1. This Hypothesis States the Following

There is no statistically significant effect of big data technology in the strategic cost management variable.

For the purpose of verifying and validating the third main hypothesis, the structural equation model was developed to prove or deny this hypothesis, and Figure (3) presents this case, and Table 3 presents the values of the correlation of the model, which indicates the rejection of the third main hypothesis.

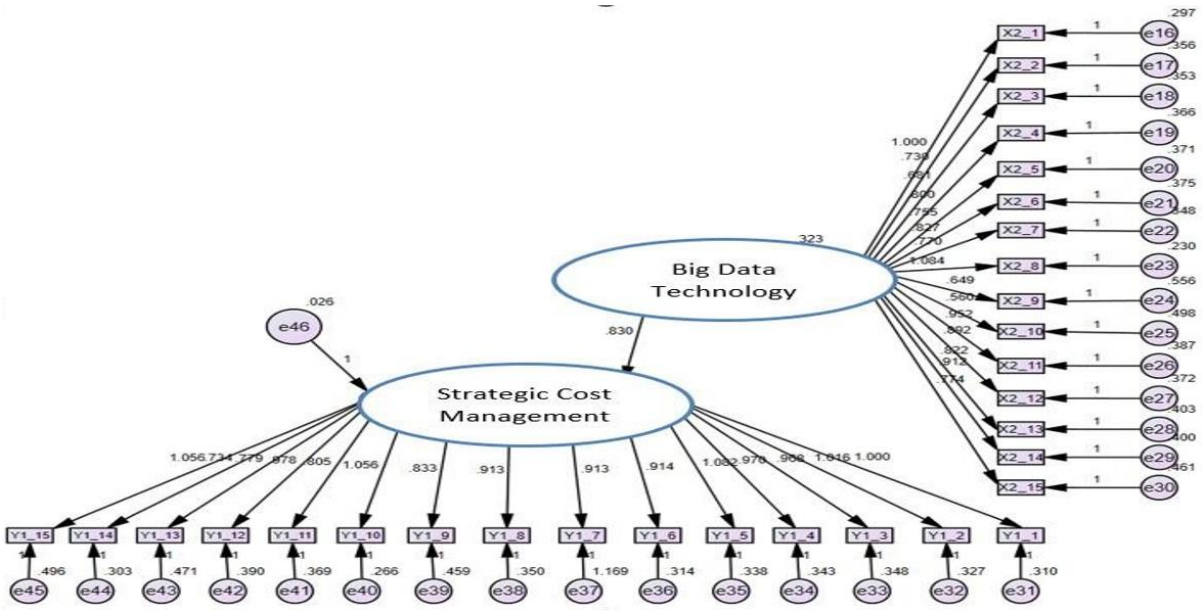

Figure 4: The impact of big data technology on strategic cost management.

Table 3: Analysis of the impact of big data technology on strategic cost management.

Coefficient of determination	P-value	Regression coefficient	Dependent variable	Independent variable
89.6%	0.000	0.83	Strategic Cost Management	Big Data Technology

Where we can see from Table (29) that there is a significant impact of big data technology in strategic cost management, because the probability value associated with the value of the regression coefficient is less than the significance level of 0.05, and thus there is a statistically significant effect of big data technology in the strategic cost management variable, and big data technology includes challenges of capture, duration, storage, research, sharing, transportation, analysis, and visualization. The trend towards large data sets is due to additional information derived from analyzing one large set of relevant data, compared to discrete, smaller sets with the same overall data size, allowing for correlations that reveal "pivotal business trends. The application of strategic cost management in the economic unit requires an accurate understanding of its operations and activities and the human and material resources it requires, in addition to understanding the requirements of the competitive market by understanding what customers need and what competitors in the market can provide to them, as well as understanding and awareness of the competitive strategy followed and working to implement it as required. Thus, we reject the null hypothesis and accept the alternative in the sense that:

((There is a statistically significant effect of big data technology in the strategic cost management variable))

The value of the regression coefficient indicates that this effect is positive and is explained by about 90% as is clear from the value of the coefficient of determination.

5.1.6. Testing the Fourth Main Hypothesis

5.1.6.1. This Hypothesis States the Following

There is no statistically significant effect of big data technology on the variable of accountants' skills in the technological environment.

For the purpose of verifying and verifyingthe validity of the fourth hypothesis , the structural equation model was developed to prove or deny this hypothesis, and Figure (3) presents this case, and Table 3 presents the values of the correlation of the model, which indicates the rejection of the twelfth main hypothesis.

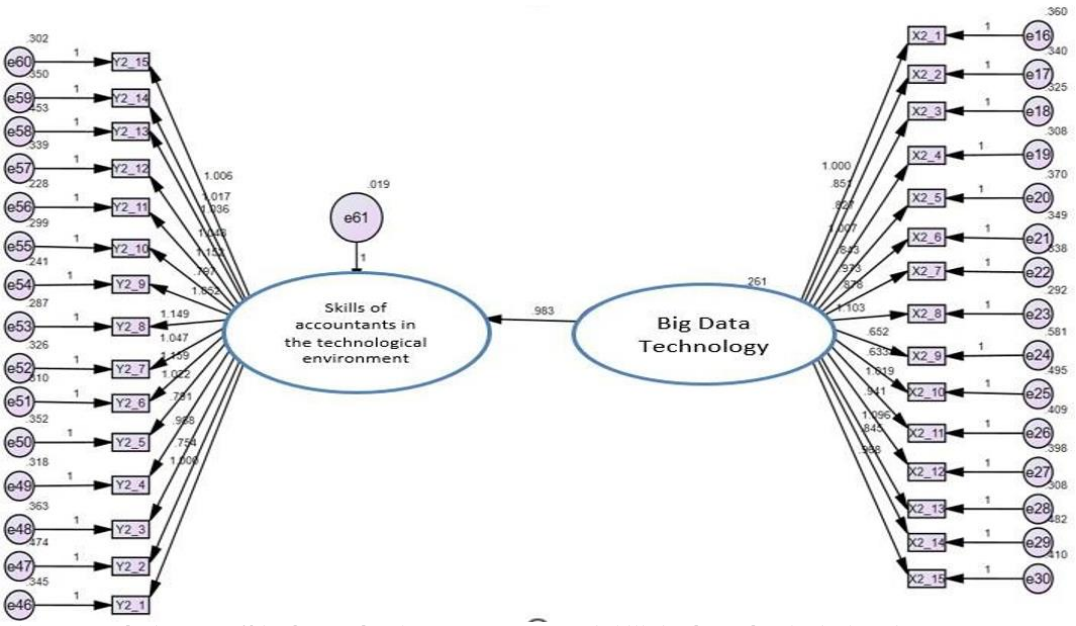

Figure 5: The impact of big data technology on accountants' skills in the technological environment.

Table 4: Analysis of the impact of big data technology on accountants' skills in the technological environment.

Coefficient of determination	P-value	Regression coefficient	Dependent variable	Independent variable
92.9%	0.000	0.983	Skills of accountants in the technological environment	Big Data Technology

Where we can see from Table (30) that there is a significant impact of big data technology on the skills of accountants in the technological environment, because the probability value associated with the value of the regression coefficient is less than the significance level of 0.05, and this indicates a statistically significant effect of big data technology in the variable of

accountants' skills in the technological environment, and big data requires exceptional techniques to process large amounts of data efficiently within the allowed time. Big data is multidimensional and can be handled more efficiently through stress-based calculations such as partial multilinear space learning. Additional technologies being applied to big data include massive databases that are processed in parallel by study-approved applications, data and mining networks, distributed file systems, distributed databases, cloud-based infrastructure and the Internet. It helps in developing skills related to the ability and position possessed by the individual accountant, these skills can be developed to improve personal skills and individual learning, while interpersonal skills are those that enable the accountant to work with others for the benefit of the organization and using these skills the accountant can influence, motivate, resolve conflicts and delegate tasks to his team members to achieve the goals of the organization In order to achieve this, the accountant must have good skills and contact that enable him to convey, discuss and defend his point of view, orally In writing and in official or informal places. Thus, we reject the null hypothesis and accept the alternative in the sense that:

((There is a statistically significant effect of big data technology on the variable of accountants' skills in the technological environment))

The value of the regression coefficient indicates that this effect is positive and is explained by about 93% according to what is clear from the value of the coefficient of determination.

6. CONCLUSIONS

This section includes a set of conclusions reached through theoretical and applied study, as shown as follows:

1. Blockchain technology collects data and information on all transactions within time-series blocks, so that these blocks form a chain, known as a blockchain, each containing information related to the previous block, so that it is impossible to modify any block without modifying the entire chain.
2. Big data represents an important stage in the development of information and communication systems, and it expresses in its simplified concept a huge amount of complex data that exceeds the size of the ability of traditional computer software and mechanisms to store, process and distribute it, which resulted in the development of advanced alternative solutions that enable control and control of its flow, and big data technology has the ability to analyze the data of Internet sites, sensors and social networking data.
3. Strategic cost management seeks to focus on the external environment and interact with it in order to identify and respond to customers' renewed desires, monitor cost management performance and increase

productivity, and focus on the concept of value chain analysis by improving the strategic activities of the company, as it emphasizes the strategic dimension of cost, and this leads to improving profitability and reducing cost .

4. The skills of accountants include good thinking skills and problem-solving ability, communication and communication skills, skills of discovering environmental information during which the accounting profession is practiced, professionalism of the profession with its recognized ethics, and skills to deal efficiently with difficult circumstances.

5. There is a significant impact of blockchain technology in strategic cost management, because the p-value associated with the value of the regression coefficient is less than the significance level of 0.05 and therefore there is a statistically significant effect between the two variables

6. There is a significant impact of blockchain technology on the skills of accountants in the technological environment, because the p-value associated with the value of the regression coefficient is less than the significance level of 0.05, and therefore it can be said that there is a statistically significant effect of blockchain technology in the variable of accountants' skills in the technological environment.

7. RECOMMENDATIONS

After a set of conclusions reached in the previous section has been presented, the following recommendations will be made in this section:

1. Employing different systems to deal with different data and generate information, and therefore, the more this environment was developed, the more technological characteristics of different companies and projects.
2. Preparing a database for collecting data in the form of groups called nodes or blocks, and these data or information are related to each other and are characterized by being non-modifiable by unauthorized persons and decentralized so as to allow those dealing with them from different regions to deal with them and that they are low-cost regardless of the founding cost .
3. Economic units should take into account the application of big data because of its important information benefits that enable companies to perform their various activities in a high-precision and quality manner and keep pace with important technology developments.
4. Adopting an integrated system of elements represented in human capabilities, devices, computers and advanced technological techniques that produce a huge amount of information capable of providing services to the relevant parties.
5. Providing new services to customers such as automated operations and predictive analytics for decision-making, as big data thus has the ability to predict future products and services and anticipate the tastes of customers and customers, and even contribute to their production and thus have achieved a competitive advantage for the companies that deal with them.
6. The need for banking units to adopt the strategic approach to cost management through the use of costing and administrative tools and methods because they are more suitable for the changes and modifications that accompanied the current environment of banks.

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