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The impact of blockchain technology on the qualitative characteristics of accounting information and its impact on users of financial statements (Investment decisions in the stock market).

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Abstract:

The research aims to demonstrate the impact of using Block Chain technology on the qualitative characteristics of accounting information and its impact on users of financial statements. The qualitative characteristics of accounting information are divided into two parts: the basic characteristics, which include the property of relevance and the property of faithful representation, and the secondary supporting characteristics, which include the property of comparability, comparability. For understandability, verifiability, and timeliness.

We would like to point out that the use of Block Chain technology represents the best way to improve the efficiency and quality of accounting information by reducing manual procedures, eliminating the need for intermediaries, eliminating opportunities for human error in providing accounting services, and ensuring the security element of accounting operations and financial transactions is achieved, which contributes to enhancing the transparency of information. Improving the quality of information provided to stakeholders.

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✓ **Keyword** : Blockchain technology, qualitative characteristics of accounting information, users of financial statements.

1. INTRODUCTION :

Rapid change and openness to others are the basic characteristic of the work environment in this era. The use of modern tools, in particular the computer, the global information network (the Internet), and various means of communication, has created a continuous technological revolution full of changes in various aspects, which led to the emergence of digital technologies and what they provide is not Only programs and applications, but more than that, as they have come to imitate humans through the communication and interaction they provide between them. This modern technology has been accompanied by the emergence of several terms such as Artificial Intelligence, Big Data, and cloud computing, in addition to block technology. Chain, or what is known as Blockchain Technology, is considered one of the most important modern technologies that is expected to overtake all traditional concepts and methods known to humanity, and it has become particularly widespread.

1.1 Research problem:

As a result of applying blockchain technology; Accounting information systems will be affected by their qualitative characteristics, and therefore we need to explain this impact and provide sufficient assurance to stakeholders that the financial statements and reports still have the same qualitative characteristics of accounting information, and what are the implications of their application on the financial sector in general. As a result, it is necessary to research the opportunities for applying this technology to benefit from the huge number of advantages it provides. Therefore, the research problem can be defined by the following questions:

1. Is there a direct and positive impact of blockchain technology on the basic qualitative characteristics of accounting information?

2. Is there a direct and positive relationship of influence of the qualitative characteristics of accounting information on the enhancing characteristics of

the qualitative characteristics of accounting?

3. Is there a direct and positive impact of blockchain technology on users' performance through the qualitative characteristics of accounting information?

1.2 Study hypotheses:

1- There is a direct and positive impact of blockchain technology on the basic qualitative characteristics of accounting information.

2- There is a direct and positive relationship of influence to the qualitative characteristics of accounting information.

3- There is an indirect and positive impact relationship of blockchain technology on the performance of users (users of financial statements) through the qualitative characteristics of the information.

1.3 Research objectives:

- Discussing blockchain technology and clarifying its general nature, basic elements, and working mechanism.
- Shedding light on the expected effects of blockchain technology on the qualitative characteristics of accounting information.
- Highlighting the role of blockchain technology on users of financial statements with regard to the disclosure and transparency that blockchain technology provides.

1.4 The importance of research:

- Studying one of the relatively latest technologies, Blockchain, and its uses in the field of financial accounting, specifically its effects on the qualitative

characteristics of accounting information and its impact on users of financial statements.

- ❖ The study of digital financial reports and statements is one of the topics that has received the attention of researchers, but the study, analysis and testing of the impact of Blockchain technology on the qualitative characteristics of accounting information and its impact on users of financial statements has not received sufficient attention due to the relatively newness of this topic.
- ❖ the impact of Blockchain technology on the qualitative characteristics of accounting information and its impact on users of financial statements.
- ❖ Accessing the impact of Blockchain technology on improving digital financial reports would help and contribute to improving the production, distribution, and use of these reports.
- ❖ The need to explain the effects of blockchain technology on the qualitative characteristics of accounting information because of its impact on the users of this information .
- ❖ The many characteristics and features that blockchain technology possesses, including security, speed of completion, and transparency in dealing, make it a focus of interest for many sectors that are looking to develop their systems for the various activities that they carry out, in addition to the improvements and effects that technology provides in the financial sector.

2. Basics about blockchain technology

Blockchain is an encrypted cloud technology used to record and share data, without the need for a central intermediary. This technology relies on a distributed network of computers and servers that store an updated copy of the database. The information is recorded in the form of blocks or “blocks,” and each block is linked to the previous block in the chain using the symbolic hashing process (Demirkan. 2020). The chain is continuously updated by a group of distributed participants (Nodes) who verify the information and update records. The information in the blockchain is verified using encryption and digital signature techniques. The technology allows the transfer of digital assets in a secure and transparent manner, and is used in many fields such as preparing accounts and financial statements, digital currencies Bitcoin, e-commerce, e-government, and e-voting.(Liu, M., Wu, 2019) In general, Blockchain is one of the aspects of modern technology that relies on collaboration and consensus. The term is used to indicate strong agreement on a particular theory or concept after it has been confirmed independently and simultaneously by several individuals from the scientific community. Consensus is also seen as strong evidence of the validity and soundness of the idea. This is what makes Blockchain one of the applications because it is characterized by consensus that is difficult to manipulate

and provides security, credibility and trust, as the success of the system depends on its ability to achieve consensus on a continuous and regular basis.

2.1 The nature of Blockchain technology:

Although Blockchain technology is still in its early stages and has not reached adoption by all business establishments, it represents the cornerstone of the future knowledge economy. Its applications are in a state of great progress and its uses are numerous, especially in the field of accounting, specifically in processing and exchanging financial data in a safe, reliable and transparent manner. It enables ease and speed of access and accuracy in processing transactions, as well as the inability of any party to tamper with them (Evelina & Katharina, 2018).

2.2 Blockchain technology concept:

Blockchain technology appeared for the first time in 2008 by combining software engineering, distributed computing, cryptography, and economic game theory (Al-Jallab 2021). Its first generation was the first application to support simple transactions and the basic technology of encrypted currencies such as Bitcoin and services related to money transfer such as payment mechanisms. And online transfer services, and the role of this generation was limited to being a record that keeps these transactions: (Morkunas, et al, 2019). It expresses an emerging technology with multiple capabilities capable of changing the way business establishments operate by overcoming the problems existing in the accounting system. Until the second generation appeared in 2014, capable of supporting and implementing smart contracts and sending financial data and information without the need for a trusted third party such as banks or auditing companies (Abdel Fattah, 2019: 179). There are many definitions of Blockchain technology. (Sultan, et al. 2018), see it as a shared database for keeping transaction records capable of ensuring data integrity by using encryption algorithms that make it impossible to manipulate the history of transactions, (Fanning and Centers2016) defined it as a distributed database that maintains A constantly growing base of data records against tampering or modification even by operators of data stores in nodes, as defined by: (Alex Hughes, 2019) as a database in the form of secure, decentralized, distributed encrypted applications that allow clients to exchange values and assets among themselves. quickly and accurately without the need for an intermediary and at the lowest costs, while Simpi Khandelwal (440: 2019) sees it as a distributed database of records and all digital transactions or events that have been implemented and shared between the parties participating in the chain, and each transaction is verified by the consensus of the majority of participants in the system. Once the information is entered, it can never be deleted or modified. Hence, Blockchain technology differs from traditional central networks in that in traditional networks there is always a risk of fraud or attacks by external hackers, while the block chain is a set of blocks. New blocks include timestamps that cannot be deleted or modified, ensuring that a series of transactions are not tampered with because each block indicates To the previous block (Alex Hughes, 2012) It is clear from the above

that Blockchain technology is a distributed and shared public ledger that allows financial transactions to be recorded, verified and authenticated by relevant parties without the need for an intermediary party. Transaction data is stored and secured by encryption, in addition to that the transaction is executed as a block and is added. The previous blocks that make up the chain are constantly increasing, and the block is added to the chain gradually in a chronological sequence. The block chain includes complete and accurate identifiers for the correct balances, starting from the formation block until the final block of the chain.

2.3 The importance of Blockchain technology:

Blockchain technology is considered one of the major innovations in the financial sector, as it provides an innovative solution to many of the challenges facing the financial services industry. Blockchain has many unique features that ensure security, transparency, speed and effectiveness in conducting financial transactions (Pascual Nebreda, L. 2021).

Blockchain technology makes it possible to trade financial assets and digital currencies without the need for financial intermediaries, thus reducing costs and increasing the speed and efficiency of trading procedures.

Blockchain can be used in many financial applications such as recording financial transactions, issuing securities, settling payments, managing financial risks, and verifying the digital identity of users. (Swan, M. 2015) Blockchain technology is also considered a solution to the problem of fraud and manipulation of financial data, as all transactions are recorded in the block chain and cannot be tampered with or changed. Thus, Blockchain ensures the credibility and transparency of financial transactions and enhances trust between financial parties. (Pascual Nebreda, L. 2021) In addition, blockchain technology offers new investment opportunities and provides a more competitive environment for companies and financial institutions. This new environment encourages the provision of innovative, effective and competitive financial services, which enhances economic development and contributes to improving the financial situation of individuals and institutions. In the end, the application of blockchain technology requires several requirements in order to ensure its correct operation, and the most important of these requirements are:

1) The Internet: Blockchain technology requires the Internet as a means of communication between the various devices involved in the process of verifying and verifying operations and transactions.
2) Computing devices: Blockchain technology requires powerful and advanced computing devices that are capable of processing the large amount of transactions and operations necessary to produce blocks of data.
3) Blockchain software: This includes software such as “Node,” “Wallet,” “Explorer,” “Miner,” and others, which are used to manage and operate the network and carry out the necessary operations and transactions.

4) Security: Blockchain technology requires high levels of security, because it depends on the availability of trust among participants in the network, and for that, work must be done to protect privacy, data, and transactions with the best methods and technologies available.
5) Transparency: There must be high levels of transparency in blockchain technology, as users must be able to follow all operations and transactions that occur on the network in a clear and understandable manner.
6) Will and interaction: Blockchain technology requires the will of the participants in the network to produce and organize blocks and manage operations and transactions, and there must be interaction between the participants.

2.4 Types of Blockchain technology and its applications:

☑ Public Blockchain: It is a database open to all participants and does not have a single owner. Any participant can read and write the transaction, verify the validity of the transactions, publish information, add new blocks to the chain, or update existing blocks centralization is distributed, and therefore it is called Permissionless Blockchain.

Among the disadvantages of this type of chain is the slowness, The rate of safety is low, and the cost is high due to the need for many devices with high storage capacity and thus consume a lot of electricity. It also does not take into account privacy because it is public and anyone participates in it (Sultan, Ruhi, & Lakhani, 2018) and accesses information available to the public This type of chain is now limited to digital currencies, the most famous examples of which are encrypted digital currencies Bitcoin (Rebecca.Yang.2002)

☑ Private Blockchain: It is a database that is not open to everyone and allows a certain number of participants to join but not the rest. It has the characteristic of controlling access to the network through a central figure (founder or group of founders) according to rules and conditions. It was agreed upon by the founding party and is partially decentralized and distributed, which is why it is called Permitted Blockchain, in which all participants are known and trusted, such as R3 Corda. Dragonchain Blockchain Hyperledger. It is clear from the above that there is a similarity between the private blockchain with traditional accounting books, as it is applicable within financial institutions in order to simplify operations between internal parties and provide transparency and trust to external stakeholders.

☑ Conortium Blockchain: It is a database open to a distinct group only, and the consensus process is controlled through distinct servers using a set of rules agreed upon by everyone (Sultan, Ruhi, & Lakain 2018), It represents a combination that combines the advantages of the private and public blockchain, which gives businesses that use it great flexibility in choosing

private and public data transparently without sacrificing security and privacy, in addition to the ability to publish to many public blockchains at the same time, which increases the security of transactions. Examples include: Dragonchain Company, and in light of digital transformation and the requirements for speed and accuracy in executing transactions, there are a large number of applications that rely on Blockchain technology to meet these needs without seeking help from a third party, Among these applications that use Blockchain technology are: (Sultan, Ruhi, & Lakhani, 2018) Record keeping applications include all the processes of recording and keeping accounting records and storing information related to health care, and the processes of preserving private property, intellectual property and voting in electoral processes. There are three projects that were established to enhance voting in Bitcoinress Remotengrity and are being developed through Blockchain elections technology. Vote now Digital currency applications include electronic commerce, international payment (bank transfers, especially external ones), settlements with banks and financial institutions communicating in real time, direct person to person lending, microfinance, discounts... etc.

Applications related to security (collateral) include equity, private funds, debt and crowdfunding operations.

Smart Contract Applications: Smart contracts are a protocol that works in an encrypted manner through software capable of sending contracts from one person's account to other accounts by registering on Blockchain platforms without the intervention of a third party or any central entity, based on a code with the terms and conditions that have been agreed upon and which This agreement will be implemented and cannot be canceled after that. One of the most famous smart contract platforms is the Ethereum platform, and smart contracts can be adopted in various industries and fields such as smart homes, e-commerce, real estate and property management, and other businesses.

From the above, it can be said that Blockchain technology works to modify the methods of exchanging, collecting, distributing and reviewing information, leading to the emergence of a new accounting infrastructure that provides the opportunity for accounting to process a large set of information in the shortest possible time and implement global trends in the field of transparency, control, accountability and disclosure.

3. How Blockchain technology works:

There is a difference between traditional technologies and Blockchain technology for storing information. In traditional technologies, storage is done in a

central device known as a server, while in Blockchain technology, storage is decentralized and distributed in devices spread over the network called nodes, in order to verify the validity of the transactions that take place before adding them to the network, and encryption is also done. Each transaction to prevent modification and tampering, and the blocks are linked to each other through the public key used across the network, which is used to identify the process. There is also a private key owned only by the owner of the process. The block chain consists of: (Coyne and McCickle, 2017) four main elements, which are:

- Hash: It is called the electronic signature, and it is like the DNA that distinguishes each block from other blocks. It is a software code that is created through a mathematical algorithm and the hash helps in linking the blocks in a sequential manner. Each block is linked to the previous and subsequent hash. Also, hashing does not allow modifying the content of blocks.
- Data: These are the commands that are executed within the block.
- Block: It represents the basic building block in the chain, and it is a group of transactions that are carried out or executed within the chain, and the block has a maximum number of transactions that it can accommodate, such as transferring funds, transactions related to buying and selling.
- D - Time Stamp: It records the timing of transactions occurring within the block chain. (Markunas 2019) explained the main steps by which Blockchain technology works, which are:

Transaction request: The sender sends the transaction containing the transaction data, the recipient's public key, the transaction value, and the sender's encrypted digital signature, in order to verify the validity and credibility of the transaction. Block formation: Nodes receive the transaction and verify its authenticity by decrypting the digital signature. Then one of the nodes uses the pending transactions to form a new block or add it to an existing block.

Sending the block to every node in the network. The contract authenticates the new block from the rest of the participants at 51% of the participants, which means that tampering is not possible. Adding the block to the rest of the chain: After ratifying and approving the block, the new block is linked to the current block chain, which means publishing the updated version of the block to the rest of the chain. It is worth noting that these steps may take 3 to 10 seconds to complete, which distinguishes Blockchain technology with the tremendous

speed of settling financial transactions and the immediate disclosure of all transactions. (Mahmoud, 2020) It is clear from the above that there is no central intermediary, but communication takes place directly between dealers, and that the transaction is verified by the nodes (computers and the people who manage them), and therefore there is no room for tampering with dealers or loss of information because it is present at all points.

3.1 Challenges of implementing Blockchain technology:

Despite the benefits that Blockchain technology brings; There are challenges you face when applying, as follows:

- Identity theft: When a person's private key is stolen, it cannot be recovered, and all of the key owner's assets registered on the chain disappear, and it is not possible to determine the identity of the thief or trace the theft (Ahmed, 2019)
- System penetration. Despite the security precaution using strong encryption algorithms in this technology, the issue of system penetration and electronic security represents the most important problems that affect decisions to share personal data and disseminate data and information using block chain technology. (Botkhina, Ryumkin, 2017)
- Majority control or attack %51% According to Blockchain technology, any modification to the recorded data and information requires the approval of %51% of the participants in the chain, which may represent a problem when a group of participants in one node controls many of the resources calculated in The network then dominates the processes of verifying and approving transactions (Khandelwal, 2019)
- Lack of complete understanding of Blockchain technology: which delays the application process. This is due to a lack of cultural acceptance of change, resistance to change by some, or ignorance of the technology, its characteristics and capabilities, which represent the greatest operational risks for the blockchain (Enrique & Michaela. 2019).
- Implementation costs: Replacing the traditional system with a block chain system results in a loss to the current system, an increase in the prices of future systems, and the costs of maintenance, monitoring, follow-up, and training workers to deal with it. (Ahmed, 2019). In addition to reducing dependence on the human element and thus reducing many jobs, high unemployment rates, and illegal activities by completing money laundering operations, terrorist financing, and other illegal activities using virtual currencies, which requires the need for state intervention by establishing controls and legislation that limit the use of encrypted digital currencies. In those illegal actions (Potekhina, Riumkin, 2017)

The researchers believe that businesses must take advantage of the opportunities and face the challenges resulting from the widespread spread of Blockchain technology, learn about developments in this technology, and benefit from the opportunity to develop, learn, and increase capabilities to adapt to the requirements of rapid changes in the business world.

4. Blockchain technology in accounting perspective:

Blockchain technology is essentially an accounting technology concerned with transferring ownership of assets and maintaining financial information recorded in the ledger (ICAEW2018), and there is a steady increase and growth in the use of Blockchain technology in the accounting field (Abdel Fattah, 2019). The Big Four: KPMG - Ernst & Young - accounting and auditing offices in the world, represented by:

The Blockchain Office towards using technology Pricewaterhouse Coopers - Deloitte (KPMG) launched the Digital Ledger Services program in 2016 to help financial services companies verify the application of Blockchain technology, and implemented a strategic partnership with Microsoft and supported the Blockchain Nodes system that the company uses to provide the blockchain, He provided advice to clients on how Blockchain technology could help improve the speed and security of information, reduce costs, improve the process of reviewing financial information, and provide various assurance services to its clients. As for Diloitte, it began working on its own chain in 2014, and created its most famous program, Rubix, which allows clients By building their own platforms on the blockchain, completing smart contracts, automating processes, and conducting financial settlements between different departments instantly. In 2017, it was announced that it had successfully automated the first financial review process for the blockchain. Ernst & Young, which participated in a project with Libra, is a partnership to provide Distributed ledgers, also the office of Price Waterhouse Coopers, has tested different blockchains and advised clients on their various uses. It has partnered with the Blockstream Foundation to provide Blockchain technology services to businesses around the world, and it has also coordinated with Libra to create Vulcan is a multi-asset blockchain platform that develops interoperable digital assets to be traded with and held with well-known virtual currencies (Cao, Bonso, 2019). The Blockchain Office towards using technology Pricewaterhouse Coopers - Deloitte (KPMG) launched a digital ledger services program in In 2016, he helped financial services companies verify the application of Blockchain technology. He implemented a strategic

partnership with Microsoft and supported the Blockchain Nodes system that the company uses to provide the blockchain. He provided advice to clients on how Blockchain technology can help improve the speed and security of information, reduce costs, and improve the review process. Financial information and the provision of various confirmation services to its clients. As for Diloitte, it began working on its own chain in 2014, and created its most famous program, Rubix, which allows clients to build their own platforms on the block chain, complete smart contracts, automate operations, and conduct financial settlements between different departments in a manner Fawry, and in 2017, it was announced that it had successfully automated the first financial audit process for the blockchain. Ernst & Young, which participated in a project with Libra, is a partnership to provide distributed ledgers. Price Waterhouse Coopers also tested various blockchains and provided advice to clients. Regarding its various uses, he has partnered with the Blockstream Foundation to provide Blockchain technology services to businesses around the world, and he has also coordinated with Libra to create Vulcan as a multi-asset blockchain platform that develops interoperable digital assets to be traded with Known virtual currencies and holding them (Cao, Bonso, 2019).

Blockchain technology is concentrated (Fuller and Markelevich 2019), a study of the financial services sector such as banks and brokerage companies. In 2016, banks and investment funds invested up to $1.4 billion in Blockchain technology, but many non-financial businesses have begun to invest in Blockchain technology. Implementing applications that rely on Blockchai technology for a variety of purposes, such as Walmart, which began in 2019 using Blockchain technology. To track products from their suppliers' farms all the way to wholesalers to better address food safety concerns (Garbade, 2018).

(Rabi, 2020) believes that Blockchain technology brings accounting benefits represented in increasing the transparency, quality and accuracy of information, the possibility of continuous tracking and monitoring, reducing fraud, storing and processing data in a way different from using usual electronic methods, and eliminating any manual effort (IFAC, 2018; Kwilinski, 2019;) is not necessary, and increases the efficiency of accounting operations, and also achieves effects and benefits on Blockchain operations. They believe that accounting technology (Hassija, et al., 2021) represents certainty, verification of the application of accounting rules, avoidance of errors, and confidence in information. Improving relations between owners and managers, automating some processes, imposing penalties and punishment for concealing information, ensuring that the information has not been tampered with or tampered with, the inability to change information, reducing missing data, and the possibility of tracking and monitoring administrative decisions and detecting any fraud that occurs during those processes. Improving vendor-consumer processes, selecting the supply chain, and aligning and managing organizational goals.

It is clear from the above that Blockchain technology achieves greater accuracy, transparency, traceability, continuous monitoring, reducing fraud in accounting operations, and increasing the efficiency of accounting operations compared to traditional methods, as the use of Blockchain technology in the field of accounting and related transactions over the Internet differs from the use of traditional accounting and traditional methods of recording... Accounting operations in many records, preparing invoices, processing data, and inventory, whether manually or using accounting programs that perform each process separately.

4.1 The relationship of accounting to blockchain:

Financial fraud is a serious problem that has affected many companies, including well-known companies such as Enron, WorldCom, Pescanova, and GOWEX. These fraudulent activities negatively affect investors and society, damage a company's reputation, and can have a detrimental impact on the economic and financial condition of the country. These irregularities include those responsible for preparing financial reports, making it difficult for investors to trust companies' accounting information.

In Spain, GOWEX and its senior managers committed financial statement manipulation by falsifying most of their revenues through false invoices, similar to what happened with Pescanova. Auditors failed to verify these invoices, resulting in significant negative consequences for shareholders. If the company's profits were supported by proven facts, these frauds would not have been committed. Therefore, there is an urgent need for more reliable and transparent financial reporting practices.

One potential solution is the use of blockchain technology, which could provide a more secure and transparent way to record financial transactions.

By incorporating a third party to verify transactions, triple entry accounting can help prevent fraud and ensure the accuracy and transparency of financial reporting. This would give investors greater confidence in the accuracy of financial information and could help prevent financial fraud in the future. Blockchain technology is a technology for recording information openly and distributed across several computer devices, and is mainly used in encrypted digital currencies such as Bitcoin. Blockchain technology offers many benefits, including:

- Security: Blockchain technology uses a network of computers connected together and secured with encryption techniques, making it difficult to manipulate and hack. Because of the distributed nature of records, it is impossible for anyone to change or modify any information in the blockchain.
- Documentation: Blockchain technology can be used to document information and transactions accurately and transparently, because it provides a reliable and verifiable record.

- Speed: Blockchain technology allows transactions to be recorded quickly, because it does not require an intermediary and does not require many reviews and confirmations as occurs in a traditional centralized system. Reducing costs: Blockchain technology allows money to be transferred directly without the need for an intermediary or bank, which reduces the costs associated with cash transfers.
- Transparency: All transactions are publicly recorded on the blockchain, which means that all data and information related to transactions can be viewed, thus providing a high degree of transparency and credibility.

4.2 Evaluating the use of Blockchain technology:

Financial market recovery: By executing and storing trades on stock exchanges at the lowest costs, quickly and safely, and helping stock exchanges save approximately 50 to 60 billion dollars annually in operational expenses and information systems.

Improving the performance of the banking system by reducing the costs of banking services, banking operations, and the costs of know-your-customer systems by a rate ranging between 30 and 70%, as 91% of banks have invested in using Blockchain technologies. Stimulating international trade by facilitating the financing of international trade services, and bridging the trade financing gap by about 30 to 40 billion dollars annually. Growth of the global economy through; Contributing to achieving global economic gains estimated at $3.1 trillion by 2030. Achieving a surplus in the balance of payments by increasing global remittances and capital movement by $500 billion annually. It is clear from the above that Blockchain technology is expected to contribute significantly to financial services, achieving significant economic gains. It also contributes to increasing the value of the company due to its ability to create new business models, enhance operational efficiencies, and reduce risks, thus motivating investors to invest in this technology.

4.3 The impact of Blockchain technology on users of financial statements:

Blockchain technology in the accounting environment in Egypt depends on two factors the non-technical aspect the nature of financial accounting and the technical aspect most accounting systems are not compatible with block chain technology. There are also a number of determinants that must be taken into consideration before establishments adopt this technology. Some of them are related to the external environment government influence, competition, confidence in block chain technology... etc, determinants related to the establishments' business network (suppliers and customers and determinants specific to each establishment separately, such as infrastructure, behavioral factors, the nature of the establishment's activity, and the returns and costs associated with it. Adopting block chain technology. Accountants and auditors have begun to wonder whether block chain technology will eventually become a substitute for specialists in the field of accounting, but the majority do not see this happening. Rather, it helps in developing the accounting profession and simplifying many repetitive accounting practices, with the need for

specialists to learn... Accounting as much as possible about this technology before it becomes a daily part of their jobs (Vetter, 2018). Accountants will not need to be engineers with detailed knowledge of how Blockchain technology works, but they will need to know the impact of Blockchain technology on their clients' businesses, and they must be able to expand their skills to include an understanding of the principles and functions of Blockchain technology for these reasons. Major accounting firms are moving to discover Blockchain applications to better serve their clients and maintain a competitive advantage (Andrew, 2019). The application of block chain technology can affect financial accounting in several aspects. On the one hand, establishments disclose accounting information on block chains by publishing documents related to transactions and events, as well as accounting policies and methods included in smart contracts in block chains. In the event of an amendment, it will be recorded. All modifications to the blockchains are easily tracked. On the other hand, many stakeholders will participate as nodes in the blockchains. It is expected that investors who enjoy technical and financial advantages will become nodes in the blockchains and enjoy the advantage of early access to the facility's information and issue their opinion on it, as well as it can become Regulatory bodies and stock exchanges are also important nodes in blockchains to better perform their oversight roles. Also important nodes in block chains to better perform their supervisory roles. (McComb, M. and Smalt, S.2018). Benefits of blockchain technology for the financial manager.

The financial manager can benefit from this technology in auditing operations through data stored in a distributed and immutable ledger, which provides a single source of truth as it provides a single source of contracts or transactions for all parties. Through this technology, credentials for goods and services can also be tracked at a lower cost and with integrity. Higher in all economic aspects, and the possibility of providing reports to companies and conducting immediate data audits more effectively. (Ben Yunus, et al. 2021) quoted from (Monini, 2020).

4. CONCLUSION

Through the study, the following conclusions can be drawn: Block chain technology (BLockchain) helps government agencies eliminate red tape, as all transactions related to individuals are clear within the chain, and some information, certificates, and documents can be easily viewed in it, which saves time and eliminates red tape. Egypt is considered one of the first African countries to consider relying on (BLockchain) technology, especially as it establishes smart cities and the National Bank of Egypt in 2020 contracted with the famous (Ripple) platform to create a new remittance service. There are many challenges facing the application of block chain technology (BLockchain) in the accounting environment, the most important of which are operational risks, the absence of accounting systems, the

problem of 51% control, governance challenges, and weak public acceptance of it. There are many factors that help the success of accounting systems based on block chain technology (BLockchain), including what is related to the external environment of the facility, such as government intervention, competitor analysis, adding confidence to this technology, factors related to the business network, and factors specific to the facility, such as its nature, the facility's infrastructure, the role of professional organizations and offices. Accounting in regulating the use of this technology. Blockchain technology has affected accounting by changing the form of the profession, expanding its fields, protecting its data from tampering, limiting profit management and real-time accounting, and the possibility of replacing the double-entry method. Blockchain technology has also influenced auditing by developing the role of auditors, creating trust between parties, saving the time of conducting the audit, and adding new tasks to the audit. The tax treatment of block chain technology (BLockchain) in Egypt still raises many problems, represented by the lack of a central authority to control this technology, the problem of tax examination of the activities and applications of this technology, and the inability of the existing tax system and laws in Egypt to subject dealing in encrypted assets to tax. Block chain technology (BLockchain) works to increase the efficiency and effectiveness of financial reports by providing them immediately to all parties dealing with the facility and preventing them from being changed at a later time. Block chain technology (BLockchain) helps increase the efficiency of the facility's accounting system, and by preventing accounting records or electronic documents. relevant changes, with the possibility of exchanging the same accounting information with many parties. Through the study, the following conclusions can be drawn: Block chain technology (BLockchain) helps government agencies eliminate red tape, as all transactions related to individuals are clear within the chain, and some information, certificates, and documents can be easily viewed in it, which saves time and eliminates red tape. Egypt is considered one of the first African countries to consider relying on (BLockchain) technology, especially as it establishes smart cities and the National Bank of Egypt in 2020 contracted with the famous (Ripple) platform to create a new remittance service. There are many challenges facing the application of block chain technology (BLockchain) in the accounting environment, the most important of which are operational risks, the absence of accounting systems, the problem of 51% control, governance challenges, and weak public acceptance of it. There are many factors that help the success of accounting systems based on block chain technology (BLockchain), including what is related to the external environment of the facility, such as government intervention, competitor analysis, adding confidence to this technology, factors related to the business network, and factors specific to the facility, such as its nature, the facility's infrastructure, the role of professional organizations and offices. Accounting in regulating the use of this technology. Blockchain technology has affected accounting by changing the form of the profession,

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This technology also helps in corporate governance in terms of making it difficult to manipulate transactions and limiting the ability of managers to profit from illegal trades. Blockchain technology has impacted the stock market and stock exchange by keeping accurate and timely records of stock owners and achieving transparency in stock exchange. This technology has also influenced the activation of the target costing method through its ability to facilitate the cooperation of supply chain members to reach the target cost number for the product. Blockchain technology has helped increase the effectiveness of open records in environmental cost management through the systematic and organized disclosure of cost information between partners and overcoming the problem of lack of transparency and pooling the ideas of different individuals. The results of the study regarding the impact of the use of block chain technology (BLockchain) on the qualitative characteristics of accounting information and its impact on users of financial statements and on the accounting environment in Egypt in general were positive, which confirms the acceptance of the study's hypotheses in practice. This technology also helps in corporate governance in terms of making it difficult to manipulate transactions and limiting the ability of managers to profit from illegal trades. Blockchain technology has impacted the stock market and stock exchange by keeping accurate and timely records of stock owners and achieving transparency in stock exchange. This technology has also influenced the activation of the target costing method through its ability to facilitate the cooperation of supply chain members to reach the target cost number for the product. Blockchain technology has helped increase the effectiveness of open records in environmental cost management through the systematic and organized disclosure of cost information between partners and overcoming the problem of lack of transparency and pooling the ideas of different individuals. The results of the study regarding the impact of the use of block chain technology (BLockchain) on the

qualitative characteristics of accounting information and its impact on users of financial statements and on the accounting environment in Egypt in general were positive, which confirms the acceptance of the study's hypotheses in practice.

4.1 Recommendations:

- ✓ The need to develop the accounting and auditing profession in Egypt to keep pace with modern technical developments and the speed of financial transactions via the Internet, whether between individuals or organizations.
- ✓ The state must intervene to raise the awareness of its citizens through its media channels and hold public forums to explain the benefits of information technology and block chains (BLockchain) and encourage establishments to adopt this technology.
- ✓ The necessity of amending the income tax law and the value-added tax law in a way that provides legal authority for the tax treatment of block chain technology (BLockchain) and its applications in Egypt.
- ✓ The role of professional organizations and major accounting offices must be increased to regulate the uses of block chain technology (BLockchain), while holding training courses for accountants and auditors to learn about everything new with this technology.
- ✓ The necessity of issuing an accounting standard or accounting guidance that clarifies the accounting treatment for applications of block chain technology (BLockchain), especially encrypted digital currencies.
- ✓ The need to increase research efforts that address the applications of BLockchain technology and the development aspects of this technology and its impact on the accounting environment in Egypt and on users of financial statements and investment decisions in the stock market.
- ✓ The need to increase educational curricula in Egyptian universities in the field of accounting with technological developments and their potential effects on accounting information systems.

4.2 Research prospects:

- ✓ The impact of block chain technology (BLockchain) in reducing tax evasion.
- ✓ The impact of block chain technology (BLockchain) on information technology governance.
- ✓ The role of the management accountant in decisions to adopt block chain technology (BLockchain).
- ✓ Integration between BLockchain technology, big data analytics, and artificial intelligence and its importance in activating strategic cost management tools.
- ✓ The impact of block chain technology (BLockchain) on auditing procedures and internal control systems in business organizations.
- ✓ The impact of block chain technology (BLockchain) on investment decisions in the stock market

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