

Digital Transformation, Blockchain, Impact on the Quality of Financial Reporting and Corporate Governance

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ABSTRACT. The biggest challenges facing accountants in the modern business world are digital transformation and the ambiguous data environment. When we combine these issues with the significance of corporate governance and its function in improving the caliber of financial reporting, the effect is immediately felt at the heart of accounting work. This study aims to investigate how blockchain technology and digital transformation can enhance the quality of financial reports and the effectiveness of corporate governance in the global business environment, particularly in Iraq. The researchers examined a variety of hypotheses in the research community, which is represented by Iraq's private banking industry, to meet the study's goal. A survey was created by the researchers and given to 136 bank workers who were chosen at random. This study used the partial least squares method for structural equation modeling and the SmartPLS3 application for descriptive statistical analysis. The findings showed that the quality of financial reports and the efficiency of corporate governance in Iraqi banks are significantly enhanced by new financial technologies like blockchain technology. These banks need to do more research and analysis on this technology, which is still showing promise.

1. Introduction

The number and caliber of digital technologies have significantly increased in recent decades, posing a threat to conventional business methods [1]. Digital technologies transform the way people live, work, and interact by transcending time and geography. Technological developments continue to distinguish digital firms and alter banks' services and goods. While digital transformation opens up new possibilities, most institutions also face threats [2]. Furthermore, these developments are continuously altering how consumers communicate with

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banks and other clients. While digitalization has many potential advantages for banks, there are drawbacks and difficulties as well.

Blockchain technology changes the way data is acquired, distributed, evaluated, and exchanged. It also gives asset owners a safe and automated accounting mechanism. Every investment in the blockchain network has precise and identical data, and the blocks recorded in the blockchain are essentially impermeable [3]. The use of blockchain technology and its special capabilities for data collection and security establishes a new accounting infrastructure and enables institutions to process large amounts of data quickly [4].

The goal of bank management is to deliver financial reporting that is accurate, dependable, and reasonably priced. Financial markets will become more efficient and banking data more dependable in the future due to blockchain integration [5]. Eliminating human error, improving operational efficiency, limiting manipulation, and reducing fraud in accounting records while saving time and money are the primary justifications for thinking about integrating blockchain technology in business facilities [6]; [7]. Others think that if blockchain technology is used properly, it can improve the quality of financial reporting used in financial reporting processes. By offering a better alternative to accounting practices and traditional accounting, blockchain technology can improve the timing and reliability of financial reporting. [8].

According to some scholars, blockchain technology can offer clever fixes for corporate governance rate inefficiencies. [9]; [10], especially in terms of transparency and interaction between shareholders and institutions. Access to financial reporting is highly simplified, thanks to blockchain technology. This is the most dependable option for shareholders and aids in providing fast information. Blockchain technology gives all shareholders a common platform to vote and submit queries and ideas, which helps to strengthen democracy among them. General meetings can also be arranged using blockchain technology. However, it is anticipated that the implementation of blockchain technology in corporate buildings will improve the precision of financial reporting and the efficiency of corporate governance [11].

The goal of the current study was to ascertain how blockchain technology used in banks will affect the caliber of financial reporting and the efficiency of corporate governance. Additionally, this study measured how the usage of blockchain technology enhances these qualities using a descriptive analysis (a questionnaire).

The growing interest in applying blockchain technology in a business setting and the propensity of numerous multinational corporations across various industries to embrace this technology make the current research significant. Additionally, projects and programs that support digital transformation and the use of blockchain technology in accounting and auditing are encouraged for global banks' accounting and audit departments.

2. Theoretical Foundations of the Research

3. The use of blockchain technology and financial reporting quality

If financial data accurately reflects the purpose for which it is generated and is pertinent, it is deemed valuable. Comparable, verifiable, timely, and transparent financial data are more valuable. To promote openness and enable investors and other market participants to make well-informed economic decisions, IASB is working to establish standards for the quality of financial information. Reduce the knowledge gap between corporate management and capital suppliers to increase accountability. Likewise, the proper application of blockchain technology in an accounting setting can improve the quality of information displayed in financial reports [12]. It can also improve the timeliness and quality of financial reporting by offering a superior substitute for conventional accounting techniques [8].

Blockchain technology might be used as a platform that allows businesses to publish content quickly whenever they want. This makes it possible for the company to operate openly and win over investors. Companies may eventually employ blockchain technology to address the issue of information asymmetry, enhance financial reporting quality, lessen information disclosure variations, and encourage truthful financial reporting [13]. Some people think that the issues with information asymmetry and the delay in financial statement publication are eliminated by using blockchain technology [14].

There could be a lot of repercussions from using blockchain technology in financial accounting. On the one side, businesses publish financial reports that detail transactions, accounting guidelines, and procedures that are incorporated into smart blockchain contracts. Any changes made within the blockchain environment are tracked and documented. Furthermore, a large number of shareholders will attend the blockchain as contract supervisors. As a result, it is anticipated that auditors will be able to examine and review the smart documents and contracts that the company publishes, and investors with financial and technical advantages will gain early access to the company's information. Legislators and stock exchange brokers can also potentially have access to the information in the blockchain to improve their supervisory functions for companies and banks [13]. Dependability at a low cost is one of the crucial characteristics that accountants highly value in financial reporting. Generally speaking, a company's financial reporting is more dependable when its data is more trustworthy, which helps the financial market function more efficiently. Additionally, as auditors spend less time verifying the correctness of the data, they benefit from more dependable data. Thus, the attempts to integrate blockchain technology into accounting procedures appear to be extremely important. Additionally, it appears vital to try to figure out how to replace or modify conventional financial reporting systems to integrate blockchain technology [15].

3.1. The application of blockchain technology and the effectiveness of corporate governance

Corporate governance's primary characteristics are openness and disclosure, which affect market efficiency and offer investors and stakeholders justice and support. Adhering to a comprehensive transparency policy and disclosing all financial and non-financial facts and information is crucial for stakeholders, empowering them to make informed decisions. Since it fosters an atmosphere where all parties involved have access to the data that aids in decision-making, transparency is a broad concept. All users should receive information as soon as it becomes available through a variety of easily accessible, trustworthy, and information-asymmetry-free disclosure channels [16]. By lowering agency costs, lessening information asymmetry between stakeholders and bank management, and enhancing information transparency, blockchain technology is anticipated to improve corporate governance efficiency in banks.

The corporate governance function developed as a result of the economic and financial crises that affected most countries; the most important of these was the lack of openness, corporate accountability, and truthful information sharing [17]. A company's financial and non-financial information must be accessible and understandable to shareholders in order for corporate governance to be transparent. Financial markets rely on reliable and accurate information to function as a mechanism for the most effective distribution of funds. The efficiency of the market is also impacted by the availability of information, the equality of the chances to profit from it, and the costs involved in obtaining it. It is expected that, given the advantages of deploying blockchain in trading institutions, innovative solutions will be offered to enhance the effectiveness and efficiency of corporate governance, especially in the relationship between shareholders and institutions. In line with [18], blockchain technology enhances the organization's interaction with its shareholders. Blockchain is the most dependable solution for shareholders and can also make information more transparent and timely. By giving all shareholders a common platform to vote or voice their opinions and by setting up shareholder general meetings, blockchain can enhance democracy [19].

When the advantages of incorporating blockchain technology into business institutions are taken into account, it is expected that creative solutions to improve the efficacy and standard of corporate governance, especially in the relationship between shareholders and the institute, will be provided. Blockchain technology can reduce the likelihood of fraud and expedite decision-making by maintaining secure and reliable records [20]. By enabling the real-time visual inspection of share transfers from one owner to another, blockchain can also result in lower transaction costs and more transparent ownership [19]. Blockchain technology is anticipated to alter how corporate governance concerns are thought of. Decentralization, transparency, transaction stability, traceability, and the dependability of the stored data are the known advantages of blockchain technology, which greatly enhance the conventional methods

businesses use for record-keeping, general meeting voting, corporate control, and auditing. Furthermore, when share manipulation becomes more difficult, the blockchain's ability to track transactions aids in the creation of equitable circumstances for owners to exercise their rights [21]. Therefore, blockchain encourages transparency by giving stakeholders and shareholders, who often require particular financial reporting, rapid access to accounting data. Additionally, blockchain makes related party transactions more public and drastically reduces the likelihood of controlling reports and employing other accounting manipulation techniques [17]. According to [18], additionally, blockchain enables companies to reveal off-balance sheet transactions, which have important implications for competitiveness, accountability, transparency, and compliance.

4. Research Method

Each research study's methodology is determined by the particular theoretical views of the researchers, their perspectives on social reality, and the unique needs of each problem. Descriptive research is done to methodically, impartially, and accurately explain the events and features of the desired issue. This study employs a descriptive-inferential approach.

Relevant and trustworthy information, as well as timeliness and accessibility, are essential components of any study or research. Various references, publications, and domestic and foreign sources found in libraries, as well as on the Internet, were reviewed and studied to gather the theoretical debates of the current research. Conducting library studies by studying the research literature is crucial to gathering the data required for the study. This can give the questionnaire's results a sense of comprehensiveness and offer a framework for more research. The components of each variable are examined using a questionnaire in the second stage of the study, which employs an inferential approach. Data was gathered using a library (documentary) method, which involved using library sources and documents to identify different aspects of the research topic. Additionally, a field study method was used, which involved gathering information about a characteristic in the population, including different individuals. When these data are combined, a structured data set known as the data matrix is produced. The survey's analytical approach is carried out in a way that aims to identify the phenomenon by looking at variable changes based on cases and looking for traits that are consistently associated with it.

The entire workforce of Iraqi banks in Baghdad made up the research statistical population. A researcher-developed questionnaire on fully digitalized banking services in a blockchain framework was given to 136 individuals who were chosen through a random sampling procedure.

4.1. Research Hypotheses

- a) The quality of financial reporting in Iraqi banks is significantly impacted by digital transformation through blockchain deployment.

- b) The efficiency of corporate governance in Iraqi banks is significantly impacted by digital transformation through blockchain adoption.

5. Research Findings

The partial least squares method and PLS software were utilized in this study to test hypotheses and validate the model through structural equation modeling. Compared to other structural equation techniques like LISREL and AMOS, the PLS is a variance-based approach that requires fewer conditions. Its primary advantage is that it requires a smaller sample size than modeling with the LISREL model [22].

In PLS, modeling is performed in two steps. The first step involves analyzing the measurement model's validity and reliability. The second step involves analyzing the structural model by figuring out the model's fit indices and predicting the path between the variables.

5.1. First stage: measuring model

The measurement model evaluates the measurement instruments' reliability and validity.

The AVE criterion (average variance extracted) and CR (composite reliability) were employed to assess the convergent validity; the findings for the four research variables are shown in Table 1. Convergent validity and correlation of constructs require two prerequisites: an AVE value better than 0.5 and composite reliability greater than 0.7 [23]. Table 1 confirms that the convergent validity of the current questionnaire is satisfactory since all composite reliability values are higher than 0.7, and all average variance values are higher than 0.5.

The reliability of the questionnaire was further examined using Cronbach's alpha method. The reliability of the items is deemed adequate if Cronbach's alpha score is higher than 0.7. The initial sample, which consisted of 30 questionnaires, was pre-tested to determine the questionnaire's reliability. The reliability was then computed using the information gathered from these questionnaires and SPSS software for each of the independent and dependent variables. The results are shown in the table that follows. The strong reliability of the questionnaire is demonstrated by the fact that every item has a reliability value of more than 0.70. It is evident from Table 1's results that the questionnaire's dependability has been verified. The reliability of the questionnaire was also assessed using the index reliability in addition to Cronbach's alpha. Additionally, the correlation between a construct's indices and that construct is computed to measure the factor loadings and determine the index reliability. An item can be removed from the subsequent analytical model if the factor loading between it and the associated dimension is less than 0.3, although the reliability of that measurement model can be deemed adequate when this value is equal to or greater than 0.3. A high correlation is indicated by all of the factor loading values between the constructs and the items being greater than 0.3, as seen in Figure 1.

Table 1: The reliability coefficient of the questionnaire items

Variables	AVE	CR	Cronbach's Alpha
Effectiveness of corporate governance	0.55	0.863	0.817
Digital transformation in the use of blockchain	0.509	0.855	0.805
Quality of financial reporting	0.598	0.839	0.783

5.1.1. Divergent validity

Divergent validity is the last criterion used to assess how well measurement models fit the PLS model. A low correlation between a latent variable's items and other latent variables is known as divergent validity. Using the approach that Fornell and Larcker (1981) recommended, divergent validity is acceptable when the square root of AVE for each construct is greater than the shared variance between that construct and other models in the model. A measurement model is said to have adequate divergent validity if one of its constructs interacts with its indices more than it does with other constructs. This is accomplished via a matrix in the PLS method, whose cells include the major diameter of the square root matrix of the AVE values for each construct as well as the values for the correlation coefficients between the constructs. Table 2 displays the divergent validity matrix.

Table 2 shows that the measurement models have acceptable divergent validity since the square root of AVE given for each construct (the major diameter) is higher than its correlation with other model constructs. The outcomes of the external model can be shown once the measurement models have passed the reliability test and been verified by convergent and divergent validity.

Table 2: Matrix of divergent validity assessment

	Corporate governance's effectiveness	Digital transformation in the use of blockchain	Quality of financial reporting
Effectiveness of corporate governance	0.771		
Blockchain technology is used in digital transformation	0.717	0.739	
Quality of financial reporting	0.658	0.584	0.731

5.1.2.Examining goodness-of-fit indices of the model

Table 3: Goodness-of-fit indices obtained

Dimensions	R ² index	Q ² index	GOF
Effectiveness of corporate government	0.515	0.41	0.621
Blockchain technology is used in digital transformation	-----	0.36	
Quality of financial reporting	0.341	0.39	

The Impact of the exogenous variable on the endogenous variable is shown by the coefficient of determination. This criterion, which is solely adjusted in the PLS, can raise the variance between the construct and the indices and decrease the measurement model's errors. According to the values of the coefficient of determination shown in Table 4, the coefficient of determination value for the endogenous variables is acceptable, and three values—0.10, 0.22, and 0.57—have been identified as the weak, moderate, and strong values for the intensity of the relationship.

The predictive power index (Q2) determines the structural method's quality. This index's objective is to evaluate the structural model's predictive power using a blind technique; the model must forecast the reflective endogenous latent variables to pass this criterion [24]. Three values, 0.02, 0.15, and 0.35, were found for the model's predictive power intensity. These values were deemed to be weak, moderate, and high, respectively, and are in line with the values obtained for each of the variables in the above table.

The overall component of structural equation models is connected to the goodness-of-fit (GOF) criterion. The GOF criterion, which is determined using the following formula, will regulate the overall fit created by [25] after examining the measurement and structural components of its general research model. The model was calculated to determine the strong value, and three values—0.01, 0.25, and 0.36—were presented as the weak, moderate, and strong values, respectively.

5.2. Step two: testing hypotheses and creating a structural model

5.2.1.A model of path analysis for research hypotheses

This section examines the study variables' coefficients, also referred to as the coefficients of the regression effect, in the relationships between variables. These coefficients demonstrate the influence of independent factors on dependents.

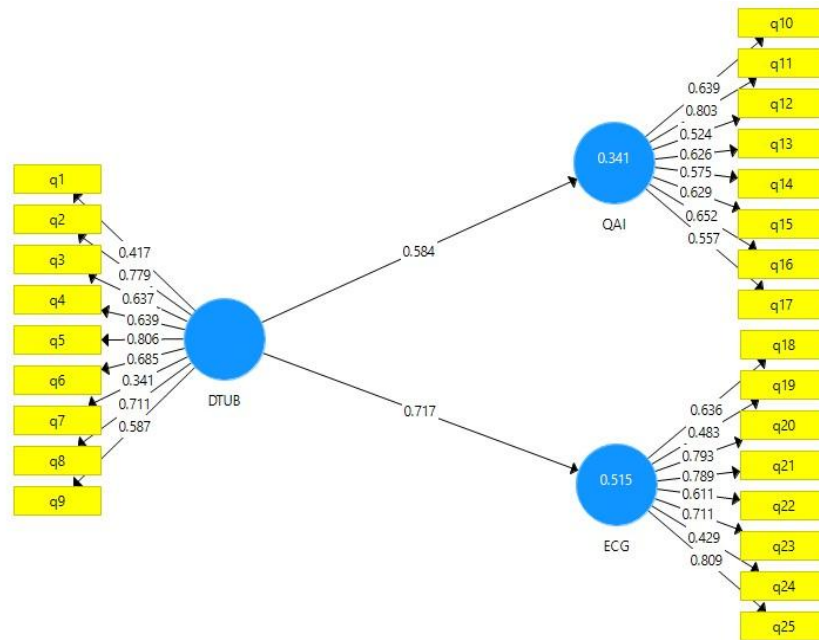


Figure 1: Confirmatory factor analysis with partial least squares

5.2.2. Assessing the structural model of significant figures

Significant numbers (t-values) are the main criterion used to evaluate the link between the constructs in the model. The validity of the link between the constructs is considered to be legitimate once the value of these figures rises over 1.96, and as a result, the study hypotheses are validated at a 95% confidence level.

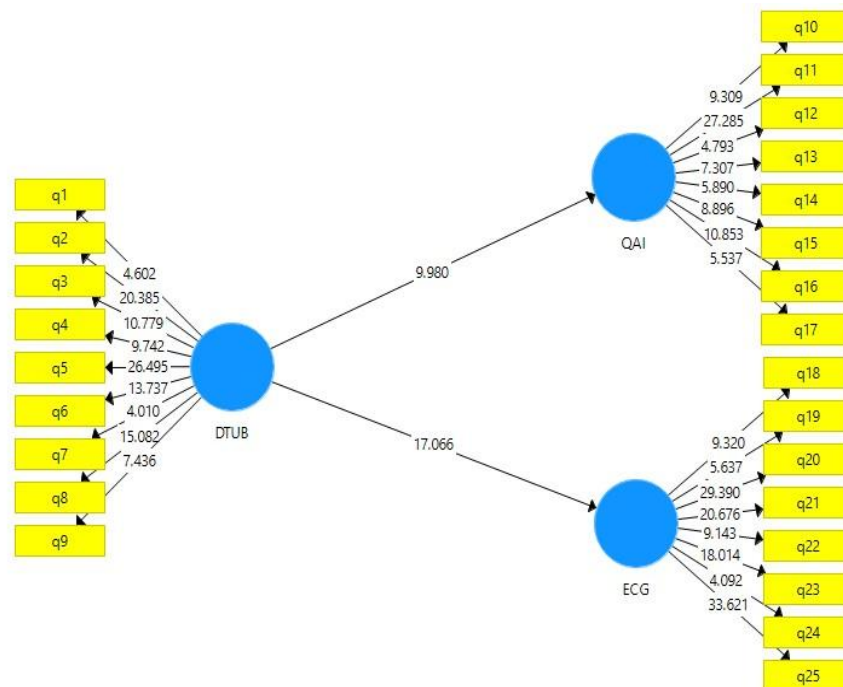


Figure 2: Confirmatory factor analysis (t-value statistic)

5.2.3. Answering the research hypotheses

The quality of financial reporting and the efficacy of corporate governance are significantly improved by the use of blockchain, according to the t-value statistic in the relationships between the variables and the fact that it is higher than 1.96 in all paths. Table 2 displays the overall findings of the hypothesis.

Table 4: Examining the results of the research hypotheses

Hypotheses	Standardized path coefficient	t statistic	Significance	Reject or confirm the hypothesis
Blockchain technology used in digital transformation has a significant impact on the quality of financial reporting in Iraqi banks.	0.717	17,06	0.000	The null hypothesis was rejected
Blockchain technology used in digital transformation has a significant impact on the effectiveness of corporate governance in Iraqi banks.	0.584	9.98	0.000	The null hypothesis was rejected.

5.3. Discussion

The current study examines the digital shift toward blockchain implementation in Iraqi banks and how it affects the caliber of financial reporting and the efficiency of corporate governance. Employees of this nation's banks made up the research statistical population. According to the findings, the adoption of blockchain technology in digital transformation can significantly enhance the caliber of financial reporting and the efficacy of corporate governance. To clarify these findings, it can be said that one of the technologies of Iraqi banks that has a particular context and enables financial transactions to be documented, validated, and approved through pertinent events without the need for middlemen is the blockchain. The transaction data is stored and safeguarded via encryption. The virtual revolution towards the implementation of the blockchain age in Iraqi banks is one of the most recent research topics in modern accounting. In addition to examining the potential and threats faced by accountants and auditors, earlier research concentrated on how the blockchain era is affecting accounting and auditing procedures. Nevertheless, not much research has been done on how the blockchain era has affected accounting statistics and corporate governance efficacy.

Blockchain technology differs from conventional databases in several ways, including how transaction logs are shared and distributed to users, which increases transparency. Using cutting-edge blockchain technology eliminates the need for middlemen to execute transactions and

increases confidence between stakeholders and investors. Smart contract technology makes encryption technology, transaction timestamps, and the capacity to automatically complete and record transactions more dependable and unchangeable. Blockchain technology has significantly altered accounting. The primary benefit of utilizing this technology is the decrease in transaction data storage expenses. Using this technology also reduces immutability and fraud, which removes the need to maintain and modify the ledger on a timely basis. Blockchain transparency enables comprehensive transaction observation as well as the application of automation and technology. As with traditional methods, the majority of accounting procedures are done by hand, which results in low data reliability and a high rate of human error. Among the additional advantages of blockchain in accounting procedures are increased regulatory compliance and reduced audit time through the automation of several audit procedures.

6. Conclusion

Theoretical research indicates that the use of blockchain technology in Iraqi banks enhances the quality of financial reporting by focusing on pertinent information and the information's predictive and verifiable value. In this case, the objective is to enhance the delivery of truthful information, which includes management of information values, completeness, objectivity, and accuracy of the content, comprehensibility, comparability, timeliness, verifiability, stability, and immutability of information, as well as the relative importance of information included in financial statements. Another objective is to significantly lower the costs of information acquisition in comparison to the anticipated benefits of such information [26]. According to [27], the implementation of blockchain technology in Iraqi banks enhances the efficacy of corporate governance by improving information transparency, financial market efficiency, lowering information asymmetry, lowering uncertainty regarding the present or future performance of banks, strengthening the bond between shareholders and management, and promoting greater transparency and shareholder democracy. Additionally, it will offer more secure ownership and lessen the possibility of other accounting manipulations as well as the alteration of reports and logs. Other advantages of blockchain in accounting include fewer agency expenses and less worry about future audits by authorities [28].

Therefore, official agencies responsible for overseeing bank accounting standards in Iraq ought to think about integrating blockchain technology into the nation's institutions. The application of blockchain technology in Iraq and other emerging banks should be the subject of additional scientific studies in the future, with a particular focus on how it affects domestic accounting procedures. The effects of Iraqi banking's digital transition toward blockchain-based accounting and auditing automation on the efficacy and efficiency of tax accounting should also be investigated further.

Conflicts of Interest: The authors declare that there are no conflicts of interest regarding the publication of this paper.

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