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Article

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FINANCIAL ECONOMICS | RESEARCH ARTICLE

The impact of digital transformation towards blockchain technology application in banks to improve accounting information quality and corporate governance effectiveness

Ayman Mohammad Al Shanti^{1*} and Mohammad Salim Elessa¹

Abstract: By combining two types of studies: theoretical and field, the study aims to explore the impact of digital transformation on the quality of accounting information and the efficacy of corporate governance through the deployment of blockchain technology in banks. The study's dimensions and variables were examined using a descriptive-analytical technique. To collect data from Jordanian banks' financial analysts, auditors of shareholders' accounts, and financial managers in the field research community, data lists were developed. For the analysis of the field research data, SPSS was used. Both the first and third hypotheses were rejected, indicating that the null hypothesis was rejected and the alternative hypothesis was accepted. Neither the second nor the fourth hypotheses were accepted. In order to reap the benefits of blockchain technology in increasing the quality of accounting information and strengthening corporate governance, a digital transformation toward its application in commercial operations is suggested.

Subjects: Business, Management and Accounting; Accounting; Corporate Governance

Keywords: Digital transformation; blockchain technology application; accounting information quality; corporate governance effectiveness; banks; Jordan

1. Introduction

Recent decades have seen a significant increase in the quantity and quality of available digital technologies that can challenge traditional business practices (Hisrich & Soltanifar, 2021).



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Dr. Ayman Mohammad Al-Shanti holds a degree in Accounting & Finance from the Al-Balqa Applied University and a Ph.D. from the Sudan University of Science and technology. He has developed his Dar Al Jadwa financial consultancy financial, tax, and accounting Consultancy-Oman. Full-time lecturer at the Oman Academy for financial Sciences "accounting courses for non-accountants" - Oman. Part-time lecturer at Al Balqa applied University-Amman University College of Financial and Administrative Sciences. His teaching activity is focused on the accounting Area and his research activity is related to one. Corporate social responsibilities, financial reporting quality, Earning Management Practices, accounting conservatism, Auditor, corporate governance, and Environmental Impact Assessment.

According to Tidd and Bessant (2020), digital technologies are transforming the way people live, interact, consume and work by overcoming the limitations of time and space. Technological improvements will change the services and products offered by banks and continue to differentiate digital businesses. This presents new opportunities, but also poses risks for most banks. Moreover, these improvements are constantly changing the way customers interact with banks and customers. Although the potential benefits of digitization for banks are great, such a journey is difficult, as various issues need to be addressed.

Blockchain technology enables a safe and automated method of accounting for asset ownership. The blockchain ledger, also known as the distributed ledger, is virtually impenetrable. All participants in the blockchain network have precise and identical records (Caton, 2020; Treleaven et al., 2017). Blockchain technology alters how data is traded, gathered, dispersed, and examined. This leads to the establishment of a new accounting infrastructure that allows accounting to handle a vast collection of information in the shortest amount of time while also implementing worldwide trends in the fields of openness, control, and accountability in disclosure (Centobelli et al., 2022; Kwilinski, 2019).

Bank management strives to provide transparent, reliable and affordable accounting information. In the future, financial markets will become more efficient as bank data becomes more reliable (Centobelli et al., 2022). The main reasons for considering integrating blockchain technology into corporate facilities are to eliminate human error, increase operational efficiency, limit tampering and reduce fraud in accounting records while saving time and money. (George & Patatoukas, 2021; Qasim & Kharbat, 2020). Some believe that the proper application of blockchain technology could improve the quality of accounting information used in financial reporting processes (McComb & Smalt, 2018). Blockchain has the potential to improve the reliability and timeliness of accounting information by offering a superior alternative to traditional accounting and auditing practices (Coyne & McMickle, 2017; Kokina et al., 2017).

Some academics believe that blockchain technology can provide smart solutions to typical corporate governance inefficiencies (Abhilash et al., 2022; Bhatt et al., 2022; Zhang et al., 2020). Especially in terms of transparency and interaction between shareholders and institutions. Accounting information is instantly available thanks to blockchain technology. This helps provide timely information and is the most reliable option for shareholders. Blockchain technology helps strengthen shareholder democracy by giving all shareholders a common platform to vote, submit questions and motions. Blockchain could be used to organize public gatherings (Lafarre & Van der Elst.). On the other hand, the introduction of blockchain technology into corporate buildings can be expected to have a positive effect on the accuracy of accounting information and the effectiveness of corporate governance. Sexuality, which has faced a number of criticisms, including data protection. A company's assets and financial information, especially sensitive information, may become insecure in the face of blockchain technology, affecting the competitiveness of the company. Furthermore, there is no evidence of transaction size (Coyne & McMickle, 2017; Datta et al., 2020). Additionally, the current study aims to determine the impact of the use of blockchain technology in banks on the quality of accounting information and the effectiveness of corporate governance. How to improve the application of blockchain technology on the quality of accounting information and the effectiveness of corporate governance using descriptive analysis (questionnaire)

The importance of this research comes from the growing interest in implementing blockchain technology in the corporate environment and the trend towards adoption of this technology by many global companies across multiple industries. In addition, bank accounting departments and global audits have been directed to build projects and programs that contribute to the creation of digital transformation and the application of blockchain technology in accounting and auditing. These elements make up the structure of this study. The second section presents the rationale for the relationships between the variables. The third section describes the research model, and the fourth section uses a descriptive analysis approach to examine the data, test hypotheses, and

draw conclusions. The results are discussed further in Section 5, discussing possible practical and theoretical implications and acknowledging possibilities for future research.

2. Literature review and hypothesis development

Previous studies have examined the use of blockchain technology in banks from a variety of perspectives, including technical, economic, and accounting. As a result, earlier accounting research will receive special attention. According to (2017), ledger data in blockchain technology may be shared, updated, and modified by majority consensus. Users can also validate records utilizing the peer-to-peer network instead of a central authority. Therefore, it will alter the very traditional accounting and auditing are carried out. (2019) sought to create accounting information systems that would serve as the foundation for creating financial reports utilizing blockchain technology. He stated that auditors might utilize this strategy to support their view on the auditor by stakeholders who want credible information about the firm. (2018) investigated the influence of blockchain technology's possible implementation in financial accounting. He noted that, despite its benefits, blockchain technology is still in its early stages and has several challenges, such as inadequate data processing capacity, information confidentiality, and organizational obstacles. While (2019) decided that blockchain technology is inherent in accounting, the information in the database will be trustworthy regardless of the counterparty's trustworthiness.

About the influence of blockchain technology on the accounting and auditing professions. A 2019 study focused on the influence of blockchain technology on the audit and accounting professions. Furthermore, blockchains provide a completely new manner of recording, processing, and storing financial transactions and information, and they can alter the accounting and auditing profession and restructure the corporate environment. (2019) discovered that the use of blockchain technology in the accounting environment requires agreement among regulators, auditors, and other parties. In the same vein, 2019 research discovered that blockchain technology has caused substantial changes in the accounting environment, necessitating the need for accountants to broaden their abilities to absorb and comprehend blockchain. Finally, based on the study (2005), which was the first to present the triple-entry accounting system in accounting," the study (2019) discovered that triple-entry accounting is a new and more effective solution to solve issues of trust and transparency confronting current accounting systems. Furthermore, when correctly implemented, triple-entry accounting may significantly enhance accounting operations.

Previous studies indicate that one of the latest research themes in Contemporary Accounting thinking is the of digital transformation toward the implementation of blockchain technology in banks. Previous studies have concentrated on the influence of blockchain technology on accounting and auditing processes, as well as the possibilities and risks that accountants and auditors face. There has been little investigation into the influence of blockchain technology on accounting information quality. As well as its impact on improving corporate governance effectiveness.

2.1. Application of blockchain technology and accounting information quality

The key features that use accounting information should have been referred to as the accounting information quality (2012). Financial data is deemed helpful if it is relevant and accurately represents the purpose for which it was generated. Financial information is more valuable if it is comparable, verified, timely, and clear. The qualitative features of meaningful financial information apply to financial information given in financial statements as well as other models of financial information. The IASB (2018) strives to set standards that provide transparency by improving the quality of financial information, allowing investors and other market players to make informed economic decisions, within the scope of boosting the accounting information quality. It also aims to improve accountability by closing the information gap between capital providers and corporate management.

The proper application of blockchain technology in the accounting environment allows for an improvement in the quality of the information provided in financial reports (McComb & Smalt,

2018). Improve accounting information quality and timeliness by offering a better alternative to standard accounting methods (Coyne & McMickle, 2017; Kokina et al., 2017).

Blockchain technology may be utilized as a platform for corporations to willingly release information in the short term. This enables the business to address the of investor trust transparently, hence improving the dependability and transparency of the Financial Reporting System. In the long term, they may be utilized to successfully decrease disclosure and wind management mistakes, considerably improve accounting information quality, address the problem of information asymmetry, and promote honest financial reporting (McCallig et al., 2019; Yu et al., 2018). Some believe that the use of blockchain technology will eliminate the time delay in the release of financial statements and the associated concerns about the presence of issues at the facility (Potekhina & Riumkin, 2017).

The use of blockchain technology in financial accounting can have several consequences. On the one hand, corporations publish accounting information on blockchains by publishing papers on transactions and events, as well as accounting policies and processes embedded in blockchain smart contracts. All blockchain amendments will be recorded and readily traced in the case of an amendment. In addition, many stakeholders will participate as contracts in the blockchains, investors with technical and financial advantages are expected to become contracts in the blockchains and appreciate the advantage of early access to the corporation's information, and auditors can review the documents and smart contracts published by the corporate and their opinion on them. Regulators and the Securities Exchange can potentially become significant nodes in blockchains to better execute their regulatory functions including banks (Yu et al., 2018).

Among the many critical features, that accountants want from accounting information is high dependability at a low cost. In general, the more dependable an entity's data, the more reliable it is financial reporting is, which contributes to financial market efficiency. Furthermore, auditors gain from data that are more trustworthy since they spend less time validating the correctness of the data (Vetter, 2018). Therefore, efforts are being made to incorporate blockchain technology into the accounting function. Significant effort is also being expended to investigate how standard accounting information systems might be replaced or changed to incorporate blockchain technology (Vetter, 2018).

Blockchain technology is built into the accounting function, and the data in the database is trustworthy. Furthermore, practically all papers have been digitized and may be conveniently preserved on a variety of programs. This effectively ends traditional billing, paperwork, processing, registration, inventory, payment, and collection techniques (Coyne & McMickle, 2017; Kocsis, 2019; Kwilinski, 2019). Subsequently, it is feasible to identify the most significant predicted consequences of blockchain technology application on the quality of accounting information in connection to the transparency of information that blockchains provide to record transactions in different locations. The ledger is distributed to each participant. Thus, all transactions are accessible to all participants, increasing transparency and enabling rapid access to accounting information (Swan, 2015; Tapscott & Tapscott, 2016).

The reliability of the data that results from the presence of a consensus protocol in the blockchains necessary to add the transaction to a new block increases the reliability of the data. Transaction data is verified and validated by all participants involved in the transaction (Mainelli & Smith, 2015, 2015). Nonetheless, error and fraud reduction Human error is projected to reduce because of the use of blockchain technology owing to the availability of automated transactions and restrictions. Furthermore, blockchains may aid in the prevention of fraud and manipulation since data cannot be updated or amended once the register is closed in an encrypted manner (Mainelli & Smith, 2015).

The suitability is that some blockchain participants, such as a corporate CEO or an auditor, may have complete access to all information. Other stakeholders have restricted access depending on

their specified information needs. Therefore, each node participating in the blockchains has access to information relevant to it and relevant to the quality of judgments sought to be made (Bonson & Bednárová, 2019; Dai & Vasarhelyi, 2017). In terms of comparability, information of a comparable kind may be easily compared for different periods because of uniformity in the established fields of transactional data inputs.

Timeliness is one of the features of accounting information quality since blockchains are intended to assist create financial and other non-financial reports that need enterprise-level aggregation on a first-come, first-served basis without delay. As a result, the delay in disclosure after the fiscal term is reduced (Wunsche, 2016). Reduce information asymmetry by improving openness and accountability in light of blockchain technology's application minimizes information imbalance between management and stakeholders (Abraham and Cox, 2007). As blockchain technology solutions help to truly reflect information and reduce any potential for biased professional judgment by accountants, they provide honest representation and impartiality (Watson & Mishler, 2017).

2.2. Application of blockchain technology and corporate governance effectiveness

The main features of corporate governance are disclosure and openness, which will affect market efficiency and provide justice and protection for investors and stakeholders. Following a policy of complete transparency and disclosure of all financial and non-financial facts and information that are of importance to stakeholders to enable them to make smart decisions is what disclosure entails. Transparency is a broader term because it fosters an atmosphere in which all stakeholders have access to information that helps them make decisions. The information must be presented to all users in a timely way, as soon as it occurs, across the different accessible disclosure channels, devoid of disinformation, and reliable (2022). The benefits of blockchain technology in banks are projected to boost the efficacy of corporate governance by enhancing information openness, lowering the cost of agency, and minimizing knowledge asymmetry between bank management and shareholders.

The role of corporate governance develops in the aftermath of many nations' economic and financial crises, the most notable reasons for which were a lack of openness, transparency, and accountability in firms (2022). Transparency in corporate governance also implies that stakeholders have access to and comprehend information on both financial and non-financial elements of an organization. Financial markets rely on the dependability and quality of information to function as mechanisms for the optimal distribution of money (Rezaei, 2007). The market's efficiency is also determined by the availability of information, including the speed with which it is available, the fairness of possibilities to profit from it, and the costs of acquiring it.

Considering the advantages of applying blockchain technology in business establishments, it is expected to provide smart solutions to enhance the effectiveness and efficiency of corporate governance, especially in the relationship between shareholders and the establishment. Blockchain technology improves the relationship between shareholders and the organization (Tapscott & Tapscott, 2016). Blockchains can also make information more transparent and immediately available at the right time and are the most reliable solution for shareholders. It can increase shareholder democracy by providing a common platform for all shareholders to participate in voting or asking questions as well as organizing general meetings of shareholders (Van Der Elst & Lafarre, 2017).

Regarding the benefits of implementing blockchain technology in business establishments, smart solutions to improve the efficacy and efficiency of corporate governance, particularly in the connection between shareholders and the institution, are expected. Blockchain technology strengthens the bond between shareholders and organizations (Tapscott & Tapscott, 2016). Blockchain may also make information more open and available at the correct moment, making them the most dependable alternative for shareholders. It may boost shareholder democracy by

offering a shared platform for all shareholders to vote or raise questions, as well as holding shareholder general meetings (Van Der Elst & Lafarre, 2017).

The use of blockchain technology can speed up decision-making and cut shareholder voting expenses. Reducing the risk of fraud by maintaining safe and trustworthy records (Singh et al., 2019). Blockchains can also provide cheaper trading costs and more transparent ownership records by allowing real-time visual inspection of share transfers from one owner to another (Van Der Elst & Lafarre, 2017). Blockchain technology is expected to change the way corporate governance issues are thought about. The well-known benefits of blockchain technology, including decentralization, transparency, and transaction stability, may. In addition to traceability and confidence in the stored data, traditional corporate procedures in the fields of record keeping, voting at general meetings, corporate control, and audit may be considerably improved. Furthermore, the capacity to trace transactions in blockchains assists in creating equitable circumstances for owners to exercise their rights since it makes manipulating shares harder (Sannikova & Kharitonova, 2019).

As a result, blockchains promote transparency by offering quick access to accounting data to shareholders and stakeholders who typically have distinct accounting information demands. Furthermore, with blockchains, the possibility of wind management and other techniques of accounting manipulation will be considerably decreased, and linked party transactions will become more visible (Atzori, 2017; Yermack, 2017). Blockchains also enable organizations to reveal off-balance-sheet transactions, which have significant consequences for accountability, compliance, and transparency, as well as their competitive position (Tapscott & Tapscott, 2016).

The idea of agency serves as the primary motor of corporate governance. The company's management is entrusted to the members of the board of directors elected by the shareholders. The board of directors develops the company strategy to satisfy the stated goals and market expectations, and then employs managers and staff to carry out that strategy (Pickett, 2010). According to some, blockchain technology will boost the effectiveness of the agency relationship while decreasing agency fees. By creating confidence in the contractual connection between the management and the agent, it is also intended to enable the elimination of more internal and external control mechanisms that were previously needed by the agency's difficulties (Kaal, 2021).

The benefits of immutability in the blockchain system and encryption technology used to give assurances for transactions, boost security, and remove trust barriers in agency interactions that need agent supervision, hence reducing fraud. As a result, agency costs are greatly reduced (Kaal, 2021). Smart contracts also enable the use of encrypted agency connections, which reduces the chance of agent malfeasance and lowers agency fees. It might be stated that the agency's costs will be those connected with transactions requiring technical competence (Bonson & Bednárová, 2019; Nyumbayire, 2017). In light of Smart contract technology, the change from double-entry accounting to triple-entry accounting would reduce agency costs caused by conflicts of interest between optimizing management goals and delivering trustworthy information to users for decision-making (Vetter, 2018).

By upgrading and updating the annual general meeting, blockchain technology has the potential to significantly lower agency costs for shareholders and businesses. Shareholders are alerted instantly and can use their voting rights within a short amount of time, and the vote results may become accessible to all shareholders, although no shareholder can observe other shareholders' voting decisions (Calderon et al., 2016; Van Der Elst & Lafarre, 2017). Increased openness and accountability, according to agency theory, minimizes knowledge asymmetry among stakeholders and, as a result, can lessen possible agency difficulties (Abraham and Cox, 2007).

Although audit offices are striving to address the of agency between management and shareholders in part. It does, however, create a fresh agency problem between itself and the owners

known as the subsequent agency problem. Because the auditor is picked or appointed by management, there is no need for shareholders to put too much faith in him. The subsequent agency problem can only be overcome if all transactions are recorded by automated systems without the involvement of a “human element,” as in the case of blockchains, which are more trustworthy for shareholders (Avdzhia, 2017; Byström, 2019).

The use of blockchain technology in company facilities is projected to improve corporate governance effectiveness by boosting information openness. In terms of transparency, all transactions are available to all participants, allowing for instant access to information on both financial and non-financial elements of the company, as well as its comprehension by stakeholders. It also improves the efficiency of financial markets by giving trustworthy information that allows them to function as mechanisms for the optimal allocation of money, the speed with which it is available, and the fairness with which it may be benefited. Improving the link between shareholders and management by making information available instantly and in a timely way boosts shareholders’ trust in the enterprise’s management.

The lower the probability of profit management and other kinds of accounting manipulation, the more transparent related party transactions become. There is also a chance to disclose off-balance-sheet transactions that have significant ramifications for an enterprise’s responsibility, compliance, and competitive position. Reduce agency costs by strengthening security and minimizing trust hurdles in agency interactions that need agent supervision. Immutability, encryption technology, smart contracts, and triple-entry bookkeeping are all advantages. This reduces the risk of agent malfeasance while also lowering agency fees. Increasing the efficiency of the agency relationship by reducing the internal and external control mechanisms that were previously required by the agency in light of corporate governance reduces the agency’s costs. Reducing the agency’s later auditor challenges in documenting all transactions by computerized systems without the involvement of a “human component,” as well as their on-the-go audit, by transforming a traditional audit into a continuous audit.

Based on the research question and its objectives, this study is based on the following assumptions, based on the investigation of previous and theoretical studies on the subject of this study.

2.2.1. H1

H1a: the digital transformation towards the application of blockchain technology in Jordanian banks does not contribute to improving the quality of accounting information.

H1b: the digital transformation towards the application of blockchain technology in Jordanian banks contributes to improve the quality of accounting information.

2.2.2. H2

H2a: there are no significant differences between the averages of the answers of the sample categories of the study, depending on the function, regarding the fact that the digital transformation towards the application of blockchain technology in Jordanian banks contributes to improving the quality of accounting information.

H2b: there are significant differences between the averages of the answers of the categories of the study sample depending on the function regarding the fact that the digital transformation towards the application of blockchain technology in Jordanian banks contributes to improving the quality of accounting information.

2.2.3. H3

H3a: the digital transformation towards the application of blockchain technology in Jordanian banks does not contribute to enhance the corporate governance effectiveness.

H3b: the digital transformation towards the application of blockchain technology in Jordanian banks contributes to enhancing corporate governance effectiveness.

2.2.4. H4

H4a: there are no significant differences between the averages of the answers of the sample categories of the study depending on the function regarding the fact that the digital transformation towards the application of blockchain technology in Jordanian banks contributes to enhancing corporate governance effectiveness.

H4b: there are significant differences between the averages of the answers of the sample categories of the study depending on the function regarding the fact that the digital transformation towards the application of blockchain technology in Jordanian banks contributes to enhancing the corporate governance effectiveness.

3. Methods

Following the completion of a theoretical study to identify the nature and nature of blockchain technology in banks. To investigate its impact on accounting information quality and corporate governance effectiveness. It was found that the digital transformation toward the use of blockchain technology in banks would primarily contribute to the improvement of accounting information quality. It is also intended to contribute to the enhancement of corporate governance, particularly in the areas of disclosure, transparency, and shareholder engagement with the establishment's management, as well as to lowering agency costs and enhancing capital market efficiency.

The study relies on obtaining preliminary data from the study sample via the questionnaire list method, whether distributed via electronic accounts via the internet or through personal interviews, to identify the study sample's opinions and trends on the extent to which the digital transformation toward the application of blockchain technology in Jordanian banks contributes to improving the quality of accounting information and enhancing the corporate governance effectiveness.

Financial managers of Jordanian banks' major branches, auditors of shareholders in Jordanian banks, and financial analysts in Jordanian banks comprise the field study community. The Amman Stock Exchange lists these Jordanian banks. The following is a description of the study community and sample. Table 1 illustrates the following study community categories:

The field study sample was chosen using a random sampling procedure throughout the investigation. The sample size was determined using the following equation:

Table 1. Study community categories

Categories	Count
Financial managers	100
Auditors	268
Financial analysts	142
Total	510

$$n = \frac{N}{(N-1)e^2 + 1} = \frac{510}{(510-1)0.05^2 + 1} = 224$$

Where:

n =sample size

N = community size (510)

e = allowed error (5%)

The study may solve the above equation by substituting 212 for n (sample size). Because the field study community is divided into three distinct groups, the relative weight of each category of the study community was considered so that the research sample is as representative of the community as possible. As a result, a total of (250) questionnaire lists were given to the various groups. Table 2 indicates the number of questionnaire lists distributed as well as the number of received and accurate questionnaire lists:

Table three shows that majority of the respondents were male (86.4%) and they were within the age group of 31–50 years old approximately Two-thirds (70%), also the majority of the respondents hold a Bachelor degree (70%) while 24% of them hold Master degree. Most of the respondents had more than 8 years of working experience (68%). Hence, the demographic profile of the respondents revealed that they had adequate knowledge and experience to join the survey and provide reliable data as shown in Table 3.

4. Finding and discussion

Since producing the questionnaire lists, they were evaluated, categorized, coded the questions in them, and the answers were loaded into the statistical software program for Social Sciences (SPSS). The study will give statistical analysis findings organized by a portion of the questionnaire list questions.

4.1. Descriptive statistics and reliability

The five-point scale applied in this study was further categorized into three categories: high, moderate, and low scales. Scores more than 3.67 is viewed as high; scores less than 2.33 is viewed as low; while those between low and high scores are considered moderate (Sassenberg et al., 2011).

Table 4. Presents the overall mean for the latent variables ranging between 3.26 and 3.91. That means all latent variables have a high level of mean scores. Further, the result shows that the digital transformation towards the application of blockchain technology variable holds the highest rank of the mean, while the effectiveness of the corporate governance variable gets the lowest rank of the mean. The quality of accounting information variable was in the second rank and the

Table 2. Distributed, received, and accurate questionnaire lists

Study Sample categories	Questionnaire lists		
	Distributed	Received and accurate	
	Count	Count	%
Financial managers	70	53	25.7%
Auditors	100	82	38.50%
Financial analysts	80	77	35.8%
Total	250	212	100%

Table 3. Profiles of respondents

Category	Frequency	Percentage (%)
Gender		
male	183	86.4
female	29	13.6
Total	212	100.0
Age		
21–30	10	5
31–40	52	24
41–50	97	46
51–60	46	22
<60	7	3
Total	212	100.0
Education Level		
Bachelor	148	70
Master	51	24
PhD	13	6
Total	212	100.0
Experience		
2–4	34	16.0
5–7	33	16.0
8–10	104	48.9
<10	41	19.1
Total	212	100.0

Source: Outputs of the statistical program package for Social Sciences (SPSS)

investment in the fourth rank. In addition, all latent variables indicate acceptable reliability levels at .82, .79, and .85, respectively (Bougie & Sekaran, 2019).

4.2. Statistical analysis of responses to questions about the quality of accounting information and corporate governance effectiveness

Table 5. Summarizes the descriptive statistics of the questionnaire list's replies to the questions about the Quality of Accounting Information relevant to the testing of the first and second hypotheses, as follows:

Following analyzing the data in the previous table, the researcher concluded that the value of the weighted averages for the answers to Quality of Accounting Information questions ranged between 3.784 and 3.817. This suggests that the sample categories generally agree that the use of blockchain technology in banks helps to improve the quality of accounting information.

To test this hypothesis, a Test (T) of a single sample relied on the One Sample T-Test and explains. The following table shows the results of the Test (T) for the first hypothesis:

Based on the information in the preceding table. The mean responses for the study sample's categories were (3.80). This high score shows that the majority of the study's sample categories agree that the digital transformation toward the deployment of blockchain technology in commercial operations leads to the improvement of accounting information quality. The test's moral value (.001) denotes rejection of the imposition of nothingness and acceptance of the alternative imposition as shown in Table 6. Based on the foregoing, it is agreed that the digital transformation

Table 4. Descriptive statistics and Reliability

	Constructs	Items	Mean	Rank	Level	Standard deviation	Cronbach's Alpha
1.	Quality of Accounting Information	10	3.80	2	High	.56500	.85
2.	Corporate governance effectiveness	10	3.26	3	High	.41517	.79
	Total	20	3.53	2.5	High	.490085	.82

Source: Outputs of the statistical program package for Social Sciences (SPSS)

toward the use of blockchain technology in banks helps to the improvement of accounting information quality.

The look concludes that blockchain generation is one of many evolving in banking, appearing as a distributed shared ledger that lets events record, confirm, and authenticate monetary transactions without the need for an intermediary attached. Transaction statistics are saved and protected via encryption. The digital transformation toward the software of blockchain generation in banking is one of the most up-to-date study areas in contemporary-day accounting. Previous studies from an accounting angle have centered on inspecting the results of making use of blockchain generation in the exercise of accounting and auditing professionals, in addition to the possibilities and dangers for accountants and auditors. The effect of the software of blockchain generation on the quality of accounting information (Jacobs, 2021; Janssen et al., 2020; Stallone et al., 2021). Therefore, those findings are consistent with the result of a few studies (Qader et al., 2021; Qasim & Kharbat, 2020; Simon et al., 2017).

To test the second hypothesis, we relied on the test (f) or ANOVA analysis of the average answers of the categories of the study sample for the Quality of Accounting Information of the questionnaire list (dependent variable) depending on the function of the sample vocabulary (independent variable) using the One-way ANOVA contrast analysis test at the level of 5% significance, the following Table 7. Shows the results of test (f) for this hypothesis:

Based on the information in the previous table, the estimate for (F) is (1.215), which is greater than one, indicating that the independent variable (the function) influences the dependent variable (the mean of the responses in the study sample categories). In addition, the exam has a morale value of 0.299, which means its grounds for not imposing anything (a morale level of 0.05 or higher). As a result, the opinions of the survey sample categories are consistent. The second premise is accepted based on the previous premise (the imposition of nothingness). The digital transformation towards the use of blockchain technology in banks has helped improve the quality of accounting information, as the average responses in the survey sample categories by function did not differ significantly. The opinion of the research sample category is that blockchain technology has many features that distinguish it from traditional databases in terms of distributing and sharing transaction histories among its members, leading to greater transparency. The reliance on peer-to-peer technology also instils trust between trading parties, eliminating the need for intermediaries to complete transactions. Transaction data is more reliable and immutable using encryption technology, transaction timestamps, and smart contract technology that can automatically execute and record transactions. These results are consistent with those of previous studies (McCallig et al., 2019; Watson & Mishler, 2017; Yu et al., 2018).

Table 8. Summarizes the descriptive statistics of the replies of the second section questions to the questionnaire list questions connected to the test of the third and fourth hypotheses as follows:

Table 5. Descriptive statistics of responses to questionnaire list questions Quality of Accounting Information

N	The application of blockchain technology contributes to banks	Mean	Rank	Level	Standard deviation	Cronbach's Alpha
	Improve the relevance of the information	3.779	2	High	.5540	.848
	Improve the truthful representation of information	3.780	2	High	.5610	.854
	Improve the comprehensibility of information	3.812	3	High	.5412	.852
	Improving the comparability of information	3.817	2	High	.5623	.860
	Improve the timeliness of information	3.814	3	High	.5594	.851
	Improving the verifiability of information	3.788	2	High	.5574	.854
	Improve information stability and non-modifiability	3.801	2	High	.5587	.849
	Improving the control value of information	3.784	3	High	.5598	.841
	Reducing the risk to the professional judgment of accountants on the quantity and quality of the information in the consolidated financial statements	3.815	2	High	.5594	.840
	The costs of obtaining information are reduced to a minimum when compared with the expected benefits obtained from that information	3.798	2	High	.5614	.841

Source: Outputs of the statistical program package for Social Sciences (SPSS)

Following analyzing the data in the previous table, the researcher concluded that the value of the weighted averages for the answers to corporate governance effectiveness questions ranged between 3.02 and 3.33. This suggests that the sample categories generally agree that the use of blockchain technology in banks helps to improve corporate governance effectiveness.

Table 6. Test (T) for the first hypothesis

Constructs	Mean	t-value	Standard deviation	Sig.	Result
Quality of Accounting Information	3.80	3.452	.56500	.001	Accepted

Source: Outputs of the statistical program package for Social Sciences (SPSS)

Table 7. Results of the ANOVA test (f) for the second hypothesis

Constructs	test (f)	Sig.
Quality of Accounting Information	3.452	.299

Source: Outputs of the statistical program package for Social Sciences (SPSS)

To test this hypothesis, a Test (T) of a single sample relied on the One Sample T-Test and explains. The following table shows the results of the Test (T) for the third hypothesis:

Based on the information in the previous table, the mean response for the survey sample categories was 3.26. This high score indicates that the majority of sample categories in the survey agree that digital transformation towards the use of blockchain technology in business operations will lead to improved effectiveness of corporate governance. A test morale value of 0.000 indicates a rejection of imposing nothing and an acceptance of imposing something as shown in Table 9. Based on the above, there is a consensus that digital transformation towards the use of blockchain technology in banks will help improve the effectiveness of corporate governance. Statistical analysis shows that the use of blockchain technology in banks should help improve the effectiveness of corporate governance in terms of information transparency. Increase the efficiency of financial markets and minimize information asymmetry. To reduce uncertainty about the company's current and future performance. These results are consistent with those of previous studies (Lafarre & Van der Elst; Lafarre & Van der Elst; Lafarre & Van der Elst,).

To test the fourth hypothesis, we relied on the test (f) or ANOVA analysis of the average answers of the categories of the study sample for the Corporate governance effectiveness of the questionnaire list (dependent variable) depending on the function of the sample vocabulary (independent variable) using the One-way ANOVA contrast analysis test at the level of 5% significance, the following Table 10. Shows the results of test (f) for this hypothesis:

Based on the data within the previous table, The envisioned cost of (F) is (1.077), which is greater than one, indicating that the impartial variable (function) has an impact on the structured variable (the common of the solutions of the kinds of them look at pattern). Furthermore, the ethical cost of the examination was 0.342, which indicates the inspiration of implementing nothingness (the morale stage is greater than 0.05). As a result, there is consistency within the evaluations of the pattern classes. The fourth premise is time-honored primarily because it is totally based on the previous (the imposition of nothingness). Because there are not any substantial disparities within the common answers of the look at pattern's classes primarily based totally on function, the virtual transformation in the direction of the usage of blockchain technology in banks contributes to improving company governance effectiveness.

The evaluations of the kinds of look at pattern additionally come to the realization through the theoretical look at that the software of the blockchain era in banks is predicted to make a contribution to improving the effectiveness of company governance in terms of the size of data transparency. Increasing the performance of the economic markets, lowering data asymmetry, and lowering uncertainty concerning the modern-day and future overall performance of the

Table 8. Descriptive statistics of responses to questionnaire list questions corporate governance effectiveness

	The application of blockchain technology contributes to banks	Mean	Rank	Level	Standard deviation	Cronbach's Alpha
	Increased transparency of information	3.02	3	High	.4201	.792
	Increase the efficiency of financial markets	3.07	2	High	.4107	.791
	Narrowing the information asymmetry gap	3.11	3	High	.4111	.789
	Reduced uncertainty regarding the current and future performance of the bank	3.14	3	High	.4101	.791
	Improving the relationship between shareholders and the bank's management	3.20	3	High	.4092	.792
	Increased shareholder democracy	3.21	2	High	.4095	.788
	Provide more transparent ownership records	3.26	3	High	.4097	.790
	Reduced chances of profit management and accounting manipulation.	3.28	3	High	.4141	.793
	Reducing agency costs	3.33	3	High	.4181	.789
	Reduce subsequent agency problems with auditors	3.16	3	High	.4161	.789

Source: Outputs of the statistical program package for Social Sciences (SPSS)

Table 9. Test (T) for the third hypothesis

Constructs	Mean	t-value	Standard deviation	Sig.	Result
Corporate governance effectiveness	3.26	4.418	.41517	.000	Accepted

Source: Outputs of the statistical program package for Social Sciences (SPSS)

Table 10. Results of the ANOVA test (f) for the corporate governance effectiveness hypothesis

Constructs	test (f)	Sig.
Corporate governance effectiveness	1.077	.342

Source: Outputs of the statistical program package for Social Sciences (SPSS)

Table 11. Correlation analysis

Variables		ABT		QAI
Application of Blockchain Technology	Pearson Correlation	1	.340**	.275**
	Sig. (1-tailed)		.000	.000
	N	212	212	212
Corporate governance effectiveness	Pearson Correlation	.341**	1	.020
	Sig. (1-tailed)	.000		.366
	N	212	212	212
Quality of Accounting Information	Pearson Correlation	.272**	.020	1
	Sig. (1-tailed)	.000	.366	
	N	212	212	212

Source: Outputs of the statistical program package for Social Sciences (SPSS)

enterprise Moreover, enhancing the connection among shareholders and control, growing shareholder democracy, imparting greater obvious possession records, lowering possibilities for wind control, using different strategies of accounting manipulation, lowering organization costs, and lowering the organization's next issues with auditors all contribute to lowering the organization's next issues with auditors. These findings are consistent with the result of previous studies (Abdo et al., 2021; Al-Qudah et al., 2022; Anh et al., 2021; Van Der Elst & Lafarre, 2017; Wulf et al., 2014).

4.3. Correlation analysis

The correlation analysis of this study was subjected to a two-tailed test of statistical significance at two different levels, namely, highly significant ($p < 0.01$) and significant ($p < 0.05$). The strength of the relationship among variables was interpreted in terms of their correlation coefficients on the basis of the following guidelines by Rowntree (1981): 0 to 0.2 is very weak or negative, 0.2 to 0.4 is weak or low, 0.4 to 0.7 is moderate, 0.7 to 0.9 is strong or high marked, and 0.9 to 1.0 is very strong or high. The correlation analysis identifies the inter-correlation among the study variables. The correlations among the variables are reported in Table 11.

As shown in Table 11 the highest correlation value is related to Corporate governance effectiveness (.341; $p < .01$), and the smaller correlation value is related to the Quality of Accounting Information (.272; $p < .01$). The results indicate that all the variables have a positive relationship and significant at ($p < .01$).

5. Conclusion

The examine sought to research and determine the results of the virtual transformation towards using the blockchain era in Jordanian banks on enhancing the niceness of accounting statistics and growing the efficacy of company governance. The questionnaire questions had been separated into sections that include Quality of Accounting Information, which incorporates a set of questions related to assessing each of the primary and secondary hypotheses, and other questions. The effectiveness of corporate governance presents a chain of questions regarding the testing of the 3th and 4th hypotheses. The statistical evaluation of the responses to the questionnaire listing questions for the sector studies for the primary speculation found that the imposition of nothingness was rejected and the opportunity speculation was accepted. In terms of adoption, the virtual revolution towards using the blockchain era in Jordanian banks results in the development of accounting statistics. The statistical evaluation for the second speculation found that the null speculation, that there aren't any considerable variations within the common solutions of the 2 classes of the examine pattern relying on the feature, became accepted, indicating that the virtual transformation towards the software of the blockchain era in Jordanian banks contributes to enhancing the nice of accounting statistics at a considerable stage of 5%.

The statistical evaluation of the replies to the questions within the company governance effectiveness questionnaire listing of the sector studies for the third speculation likewise found that the null speculation was rejected and the opportunity speculation was accepted. Acceptance that the virtual revolution towards the implementation of the blockchain era in Jordanian banks results in enhanced company governance effectiveness The statistical evaluation for the second speculation found no considerable variations within the common solutions of the 2 classes of the examine pattern relying on the feature, indicating that the virtual transformation towards the software of the blockchain era in Jordanian banks contributes to improving the company governance effectiveness at a considerable stage of 5%. The blockchain era is one of the Jordanian banking-associated technologies that feature an allotted and shared ledger, permitting monetary transactions to be recorded, confirmed, and authorized via means of related events without using an intermediary. Encryption is used to keep and protect transaction data. One of the most cutting-edge subjects of inquiry in contemporary accounting is the virtual revolution towards the deployment of the blockchain era in Jordanian banks. Previous studies have targeted the impact of the blockchain era on accounting and auditing processes, in addition to the opportunities and dangers that accountants and auditors face. There have been few studies on the results of the blockchain era in terms of accounting statistics and the efficacy of company governance.

Blockchain technology differs from traditional databases in many ways, such as distributing and sharing transaction logs among users, which makes it more transparent. Reliance on peer-to-peer technology creates trust between transaction participants and eliminates the need for intermediaries to complete transactions. Encryption technology, transaction timestamps, and the ability to automatically execute and record transactions Transaction data is more reliable and immutable with the help of smart contract technology. Accounting has benefited greatly from the use of blockchain technology. Chief among these benefits is the reduced cost of storing transactional data. Reduce immutability and fraud and eliminate the need for change with the use of real-time accounting and timely updates to the ledger. Transparency on a blockchain allows for a complete view of transactions, the use of technology, and the automation of transactions. Many accounting operations are performed automatically, resulting in low data reliability and a high human error rate. Improve regulatory compliance and reduce audit time by automating various audit processes to make them fast, easy, and continuous.

Based on theoretical studies, the application of blockchain technology in Jordanian banks will improve the quality of accounting information in terms of relevant aspects of the information and the predictive and confirmable value of the information contained therein. The purpose is that. Honest presentation of information, including completeness, impartiality, and accuracy of materials understandability of information, comparability of information, timeliness of information,

verifiability of information, stability and immutability of information, management of the value of information, and relative importance of information contained in financial statements. The need for accountants to exercise professional judgment as to sex. Moreover, the costs of obtaining information are minimal compared to the benefits anticipated from such information.

This theoretical study hypothesizes that the use of blockchain technology in Jordanian banks will help improve the effectiveness of corporate governance related to information transparency functions. Increase the efficiency of financial markets, reduce information asymmetries, reduce uncertainty about the current and future performance of the Bank of Jordan, improve relations between shareholders and management, strengthen shareholder democracy, and be more transparent. Provides a more secure ownership record, reducing opportunities for wind management and other accounting manipulations. Reduce agency costs. It also reduces concerns about subsequent audits by authorities.

Based on research results critical to the digital transformation of Jordanian banks is leveraging blockchain technology to improve the quality of accounting information and enhance the effectiveness of corporate governance. Government agencies responsible for Jordanian banking accounting regulation should investigate how blockchain technology can be implemented in ASE Jordanian banks. In the future, please conduct further scientific research on the use of blockchain technology in Jordanian banks, especially its impact on internal audit processes. Conduct future research on the impact of Jordanian banking's digital transformation towards automating accounting and auditing using blockchain technology on the effectiveness and efficiency of tax accounting. Add some studies on sustainability and link them to research variables based on (Anh et al., 2021; Huy, Dat et al., 2020; Huy, Loan et al., 2020).

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