Journal of Information Systems Engineering and Management
2025, 10(37s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

The Role of Triple Entry Theory in the Development of Accounting Services Using the Blockchain Platform

Amjad S. Al-Delawi[1*], Waheed M. Ramo[2]
[1] Department of Accounting, Cihan University–Erbil, Erbil, Iraq
[2] Department of Accounting, University of Mosul, Mosul, Iraq
[*] Corresponding Author: amjad.delawi@cihanuniversity.edu.iq

ARTICLE INFO

Received: 21 Dec 2024
Revised: 05 Mar 2025
Accepted: 02 Apr 2025

ABSTRACT

Blockchain technology was introduced as an online information program that helps maintain recorded operations without allowing manipulation and allows for a secure exchange of information, funds, or posts. Central to follow the movement of transactions between the parties concerned directly with each other (peer to peer) without the need for third-party intervention such as banks or intermediaries, as the real intermediary is millions of computers connected to the series, which move between them in an encrypted and secure way documented until they reach the other party, with the assurance that there is no manipulation or falsification during the transaction, and so this technique has an impact on the different sciences and the size and nature of this effect is determined by the nature of the profession. This technique can have a clear impact on the accounting profession because it is one of the social sciences affected in the surrounding environment, in addition to the fact that the services provided by this profession are useful information that helps to rationalize different decisions as well as include economic events that occur mostly between the parties of the seller and the buyer.

Keywords: Blockchain, Accounting Profession, Accounting Services, Triple Entry Theory, Online Information

1. Introduction

Blockchain technology has begun to become a major challenge to the accounting profession because academics in the scientific and technical fields believe that it will reduce the demand for this profession's services (Gulin, et al., 2019). Furthermore, it will result in the elimination of many of the profession's standards, practices, and obligations, as events will be recorded directly and economically by an economic event party after auditors are authenticated through a series of computers linked under protocols that guarantee security through electronic encryption (Zhang, et al., 2020). The recording of economic events in accounting records is the foundation of the accounting profession. Since the profession is based on the idea of double entry, the possibilities of this technology and its usage of electronic currency (Bitcoin) eliminate the mechanism of recording and recognizing economic occurrences. Accounting is founded on the idea of recording economic occurrences in monetary units. However, there have been a series of problems, such as ignoring modern technologies make professions far from the needs of customers for the services they provide, and this may lead to the erosion of these professions and their inability to meet the renewed needs of their customers over time or the emergence of alternative occupations. The use of the dual entry theory has not been developed since its emergence, despite the emergence of information technologies through which the traditional pattern of double-entry registration can be dispensed with, and the adoption of the traditional pattern of double-entry registration determines the benefits of these techniques and eliminates many of the rules. Programming systems in general, especially accounting ones, have several important features, the most important of which is the need to make data inputs at once without the need to repeat whenever possible to achieve the speed of achievement, which is the second rule in the programming of systems. In light of this, the following research queries may be raised:

- How will the accounting profession respond to Blockchain technology?
- Does blockchain technology require a review of the principles of the accounting profession?
- Does blockchain technology require a reconsideration of the accounting profession's assumptions?

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2025, 10(37s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

- Will blockchain technology enable the accounting profession to overcome its problems?
- Will blockchain technology be used by the accounting profession to increase the quality of the services provided by this profession?
- Is blockchain just another technique with some variation, so there will be no major changes in the accounting profession?
- Will blockchain technology reduce the trust gap in the services provided by the accounting profession?
- Where blockchain accounting could be used to create the most efficiencies?

However, the significance of the research is shown in the consideration of certain concerns. First and foremost, the accounting profession seeks to strengthen its position by finding practical solutions to the challenges it faces, as it continues to face many challenges, such as its ability to truly express the financial situation of companies, as well as its ability to prevent manipulation and fraud, in addition to the adoption of personal estimates by it. The use of blockchain in assessing the value of many items, along with the freedom provided in selecting any of the techniques in conducting accounting operations since they provide more than one approach, may help solve many of these issues. Second, using blockchain technology saves the time, effort, and cost of providing accounting-related services. Third, blockchain technology offers an effective method of preventing manipulation, fraud, and hacking since its basic concept of connecting many networks in one way makes it difficult to modify and change them at a very advanced level of encryption and electronic security procedures. Finally, blockchain technology enables instant tax calculation. Hence, the aims of this study are:

i. To find out whether blockchain technology can be used to develop the services provided by the accounting profession.
ii. Determining whether the accounting conceptual framework or accounting standards will be more affected by blockchain.
iii. Learning about the procedures for developing the accounting profession through blockchain technology.

2. The impact of blockchain on the accounting profession

2.1 Blockchain definition

In contrast to traditional databases, which depend on a single entity to maintain all data, blockchains are distributed and rely on several nodes by creating a network of multiple computers that hold the same ledger and all the data it includes. If one party modifies its information, it is simple to detect any modification, making it easy to establish whether all computers have approved and saved the same data (Deloitte, 2006). Blockchain technology achieves many advantages (Fanning, K., & Centers, 2016):

- It provides a peer-to-peer network and therefore does not have a single failure point, i.e., if there is a failure in any node, the other nodes will continue to work, resulting in the maintenance of system availability and viability.
- Entire documents are digital and can be easily applied to many different applications.
- All transactions on the blockchain are visible to all participants, with increased audibility and confidence.
- Fourth-party changes to the blockchain are very difficult, and if such a change occurs, it will be visible to other users, and if it is not validated, it will not be included in the block.
- These blockchain features will eliminate third parties, reduce transaction costs, and cause a shift in many industries.

2.2 Accounting profession

The basis of the accounting profession is the idea that by recording accounting entries with creditor and debtor parties per the theory of double-entry, relaying them to the ledger, and then presenting the information through a variety of reports and financial statements, useful information can be provided to rationalize decisions (Zeff, 2003). The nature of the profession and the machinery of its work raise several questions about the objectivity and reliability of the information provided by the accounting profession, which created the

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2025, 10(37s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

profession of auditing to confirm the validity of that information and then began to ask questions about the reliability of the opinion shown by the auditors. The bankruptcy of many large companies, whose financial listings confirmed the solvency of their financial situation, as confirmed by audit reports, spawned a slew of criticisms of the accounting profession, the most serious of which is the reliance on personal estimates as well as the high degree of flexibility in the choice of any of the accounting methods (Napier, 2001). The accounting profession has suffered a crisis of confidence in its services, and the IFC has always sought to adopt different ways of reducing the trust gap in the services provided by the accounting profession, including the adoption of information technologies to ensure accuracy, speed, and cost reduction in the preparation of accounting information, in addition to resorting to accounting consolidation policies (Porwal & Hewage, 2013).

2.3 Blockchain and the accounting profession

Since blockchain technology is the most recent advancement in the field of information technology, accounting scholars have attempted to illustrate and identify its influence on the accounting profession. (Deloitte, 2006) outlines how blockchain offers integration and confidence without the need for a third party to support and certify confidence in the services, and Figure 2 illustrates this:

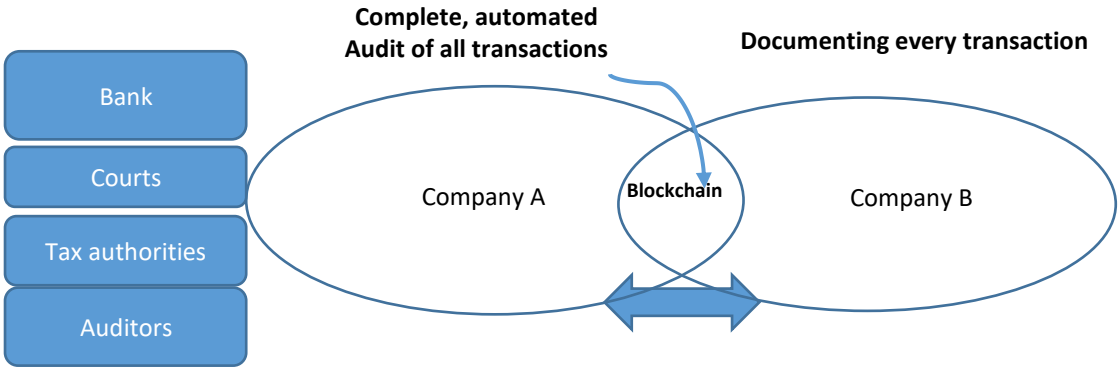

Figure 1: Blockchain roles in confirming confidence in the services of the accounting profession

According to (ICAEW, 2020), blockchain technology has the potential to improve the accounting profession by lowering the costs of maintaining and settling ledgers, offering full certainty about asset ownership and history, and helping accountants acquire clarity about resources. The researchers believe that this technique will reduce costs because it shortens the accounting cycle. For example, if company (a) sells goods or assets to the company (b), all company (b) has to do is emphasize the validity of this process rather than register it in its books, and thus it is recorded. Other than blockchain's claim, both parties have assured that neither can modify it in the future, and this method will minimize the time required to record the process in the accounts of the two firms as well as in the adjustments by around half, reducing the cost by the same amount. According to (Garcia et al., 2019), the idea of using blockchain technology, databases, and their infrastructure for accounting purposes stems from blockchain's nature as the ledger of Bitcoin transactions, which means that it is an actual accounting system that writes, stores, and publishes transaction data that is measured. Bitcoin is popular because blockchain technology allows money transactions to be recorded without the requirement for a trusted third-party broker. According to (ICAEW, 2020), the accounting components involved in assuring transactions and performing the transfer of equity via blockchain will be changed into a smart contract method. Reducing the requirement for reconciliation and conflict resolution, as well as increasing certainty regarding rights and duties, will permit a greater focus on how to account for and examine transactions, as well as growth

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

in areas where responsibility may be held. Many accounting operations may be enhanced using blockchain and other current technologies like data analytics and machine learning, increasing the efficiency and value of accounting services. The researchers believe that as a result of all of this, the range of skills represented in the field of accounting will change, and interest in certain tasks such as accounting and financial statements will be reduced within the accounting cycle in all of its steps, ensuring the source or cancellation, while other areas such as technology, suggestions, and others will expand value-added activities. Companies with large blockchain-based transactions will be less interested in auditing, and the auditor's focus will shift as there will be less need to confirm the accuracy or existence of blockchain transactions with external sources, but there will still be a lot of interest in how these transactions are recorded and recognized in the financial lists. In the long run, additional accounting data may be migrated to blockchains, and auditors and regulators with access to the blockchain network could validate transactions on time and with clarity about their source. Because all entries are distributed, blockchain technology is arguably the overall development following the accounting profession because, instead of keeping separate accounting records set up based on documents, companies can record their transactions in interlocking joint accounting records. Forgery and manipulation are not possible when they are encoded.

In Iraq, the design of electronic accounting systems continues to suffer from several flaws (Hassan et al., 2014):

- Manual accounting is still employed in the majority of government and commercial sector organizations.
- E-software is utilized in various accounting aspects in some public and private sector units, such as employing a payroll or budget program.
- Numerous private units rely on ready-made
  accounting systems, and their use is fraught with complications, such as frequent disruptions and the need to adapt often due to changes in some laws and regulations.

According to (Alfartoosi et al., 2020), the slow adoption of electronic accounting systems in Iraq is attributable to a variety of issues, the most significant of which are:

1. Lack of sufficiently qualified accounting staff to use electronic accounting software.
- The high cost of accounting programs built expressly for economic units, as well as the use of ready-made accounting programs, result in a number of drawbacks, the most significant of which are:
  A. Only the programmed firm may make modifications.
  B. Only the programmed company can perform stop repair work.
  C. Failures and interruptions will result in work interruptions and severe losses, as well as the loss of most of the company's data.

As a result, the researchers believe that Blockchain technology will be the ideal solution for developing countries, like Iraq, as well as small businesses that cannot adopt modern accounting systems for the following reasons:

- Small and medium-sized enterprises (SMEs) with limited financial resources can gain several competitive advantages by receiving accounting services directly at a cheaper cost and of good quality.
- Units in the public and private sectors will be able to overcome a lack of accounting staff since all accounting transactions will be handled using blockchain technology.
- To improve the security of the accounting system, blockchain technology employs an encryption policy for all transactions conducted using this technology, ensuring the secure movement of funds from one party to another.
- Increase accounting processor authentication and ensure compliance with accounting standards, as these documents will be used in many blockchain-related networks.
- Expand accounting disclosure so that all Internet users can view the permitted information
- The ability to impose taxes immediately.

2.4 Triple Entry Theory

To use blockchain technology in accounting, researchers have suggested the theory of triangulation registration (Dai & Vasarhelyi, 2017). It is an extension of the dual-entry theory that has been used since the

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2025, 10(37s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

16th century (Cai, 2021). This was a revolution in the way economic events were recorded at the time because the system of single-listed theory, through which one party of the process is tied up and is the other external party dealing with the project, led to the difficulty of knowing the outcome of the work of the project, profit or loss, accurately and in a way that represents its real reality And quickly? The difficulty of knowing the financial position of the project accurately represents its reality and at any time we want, because comprehensive inventory is difficult, especially in large-scale, multi-activity projects. According to the dual-entry theory, all activities are documented with a two-party entry, one debit, and one creditor, to establish a balance of audit from which final accounts may be formed. Despite the positives of this theory, it can be deceived otherwise almost as easily as the single-entry system (Cai, 2021). Many recommendations have been made throughout the years to expand the dual-entry theory and offer a triple-entry method (Dai & Vasarhelyi, 2017).

Griggs' proposal on the theory of triple constraint was highlighted after the invention of blockchain, although it was presented in 2005. The Grigg model (2005) advocated a two-party system, with a third party validating the therapy. This third party would either certify the transaction's authenticity or remove the need to limit the receipt. As a result, the customary receipt as proof of treatment would be rendered obsolete (Grigg, 2005).

With the verified arrival of blockchain technology (Cai, 2021), the third party will be a blockchain chain that will reach a very high degree of security and reliability as a result of the adoption of this series on electronic encryption. This will reduce fraudulent conduct, and Greg also advises that the transaction and evidence not just be incorporated into the tri-party system but that the bill also go through this procedure. After all, the entire system is software-based, allowing for some amount of automation. This approach would also be more efficient and quicker (Dai & Vasarhelyi, 2017, p.7).

The authors propose a system that would be built on top of the existing double-entry system, with a third blockchain layer embedded into it, and would record transactions both within the organization and with external parties. To represent current assets and liabilities more accurately, the system would embed a layer of tokens that could represent accounting entries. These tokens could be considered a representation of a physical object such as inventory or a hypothetical object such as obligations. The bookkeeping on the blockchain layer would be done by connecting each blockchain account to its corresponding double-entry account in the traditional ERP system. The process of blockchain accounting is illustrated by the authors in process of blockchain accounting is illustrated by the authors in Figure 2., representing a simple purchase and sale.

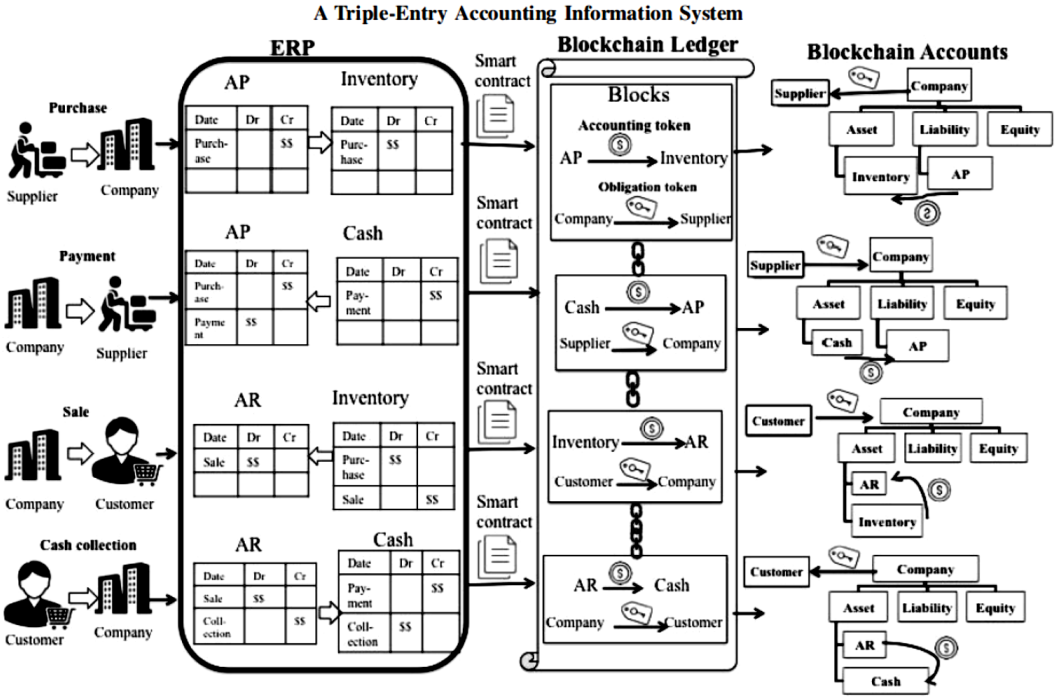

Figure 2: The process of blockchain accounting (Dai & Vasarhelyi, 2017).

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2025, 10(37s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

With blockchain power, the following can be achieved:

- Accounting standard implementation, including balance controls, asset and liability classification
- Obtaining joint assurances between organizations for accounts payable can be included with the automatic use of smart contracts.
- Different parties can be given roles to deal with data depending on the nature of that transaction.
- Automate tax filings through continuous updates.

3. Analysis and Study Results

3.1. Study Approach and Model

Three types of research can be used in research design according to the aim of the study: (1) exploratory research, (2) descriptive research, and (3) causal research (Hair et al., 2003). Therefore, based on the purpose of the study, this study has adopted exploratory research to identify influences between constructs of the study. Consequently, a review of the literature and the results of studies on blockchain and accounting have developed the study model, which focuses on discovering the influences of the blockchain on accounting to explain how we can develop the accounting services shown in Fig. 1.

3.2. Questionnaire design and source of data

This study aims to explore how blockchain affects accounting. Academic staff in the College of Administrative & Economics in Iraqi universities were chosen as a field of survey study, so (100) colleagues were taken (specialists in accounting) from academic staff as the sample for this study. The survey was conducted between January 1, 2020 and March 15, 2020. A total of 100 questionnaires were collected for analysis. The questionnaire was designed using the literature and a five-point Likert scale, and the contents are detailed in Table (1).

Table 1. Measurement items.

Variables	References
accounting existence	(Byström, 2019)
accounting gap	(Lewtan et al., 2018)
accounting standards	(Dai & Vasarhelyi, 2017)
accounting framework	(Kokina et al., 2017)
accounting cycle	(Tan & Low, 2019)
accounting in Iraq	(Coyne & McMickle, 2017)
development of accounting services	(ICAEW, 2020)
budgeting	(Lee & Yoon, 2019)
financial statements	(Tan & Low, 2019)
tax declarations	(Yu et al., 2018)
financial analysis	(Wang, 2017)
feasibility studies	(Karajovic et al., 2019)
financial advisory	(Wang, 2017)

3.3. Hypotheses Development

The hypotheses of this study were derived with the support of the technology acceptance model lens (See Fig. 3). Specifically, from the classical unified theory of acceptance and use of technology (UTAUT) model (Venkatesh et al., 2003)., the following hypotheses were proposed:

- **H1:** Blockchain has a positive relationship with accounting and auditing service's existence
- (Byström, 2019) Confirmed In accounting, blockchains could potentially improve the quality of information reaching investors in two ways: by making the accounting information more trustworthy, and by making the information timelier
- **H2:** Blockchain has a positive relationship with reducing the trust gap

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

- (Lewtan et al., 2018) Confirmed the use of blockchain will allow for extensive verification of transactions autonomously, putting managers at ease, and helping maintain confidence in the financial data that maintains the structure of capital markets. and on this basis, the following hypothesis was formulated
- **H3:** Blockchain has a positive relationship with accounting standards and processors
- (Lewtan et al., 2018) Confirmed The technology behind cryptography and the blockchain allows for that network to be secure and sequential. The organized and secure nature of this technology is why it is appealing to so many different types of parties interested in utilizing it for their business. It can disrupt what record keeping looks like and that affects auditors, companies, regulators, and standard setters alike as the world moves into a new technological age of storing and reporting. and on this basis, the following hypothesis was formulated
- **H4:** Blockchain has a positive relationship with the change of some items in the accounting conceptual framework
- (Lewtan et al., 2018) Confirmed In an everchanging world, new industries and products appear out of nowhere. Current accounting procedures may not fit the needs of companies just starting to gain their footing. To respond, the new guidance is issued to help with the transparency and validity of accounting data. For example, the FASB released ASC 606 which outlined new guidance for revenue recognition that would be required at the end of the calendar year 2018. This guidance completely altered how revenue was recognized when a transaction included the use of a contract and on this basis, the following hypothesis was formulated
- **H5:** Blockchain has a positive relationship with the accounting cycle
- (Fullana & Ruiz, 2020) determined Some of those potential applications are General (bonded contracts, multiple signature transactions), Financial transactions (pensions, stocks ...), Public records (land titles, vehicle registrations ...), Identification (driver's license, ids ...), Private records (loans, contracts ...), Physical asset keys (home, hotel rooms, rental cars), • Intangible assets (patents, trademarks, ...) on this basis the following hypothesis was formulated
- **H6:** Blockchain has a positive relationship with the accounting profession in Iraq
- (Leila, 2013) Confirmed that The technological revolution led to Prejudice to the assumptions and principles of accountability, which for many centuries remained rigid, and worked to confirm their validity, relevance, and benefit, On the other hand, the economic environment has become more conducive to accepting the controls and measures of the components of economic activity. Through the accounting service for those who manage the economic activity or researchers in it by providing information Advanced thanks to information technology to analyze economic phenomena in many ways, in addition to producing reports Statements are fair and disclosure and are easily authenticated. On this basis, the following hypothesis was formulated
- **H7:** Blockchain has a positive relationship with the development of accounting services
- (ICAEW, 2020) Confirmed Blockchain is an accounting technology. It is concerned with the transfer of ownership of assets and maintaining a ledger of accurate financial information. The accounting profession is broadly concerned with the measurement and communication of financial information, and the analysis of said information. Much of the profession is concerned with ascertaining or measuring rights and obligations over the property, or planning how to best allocate financial resources. For accountants, using blockchain provides clarity over ownership of assets and existence of obligations, and could dramatically improve efficiency. Blockchain has the potential to enhance the accounting profession by reducing the costs of maintaining and reconciling ledgers and providing absolute certainty over the ownership and history of assets. On this basis, the following hypotheses have been formulated:
- **H8:** Blockchain has a positive relationship with Budgeting
- **H9:** Blockchain has a positive relationship with the preparation of financial statements
- **H10:** Blockchain has a positive relationship with tax declarations
- **H11:** Blockchain has a positive relationship with the preparation of financial analysis

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2025, 10(37s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

- **H12:** Blockchain has a positive relationship with feasibility studies
- **H13:** Blockchain has a positive relationship with financial advisory

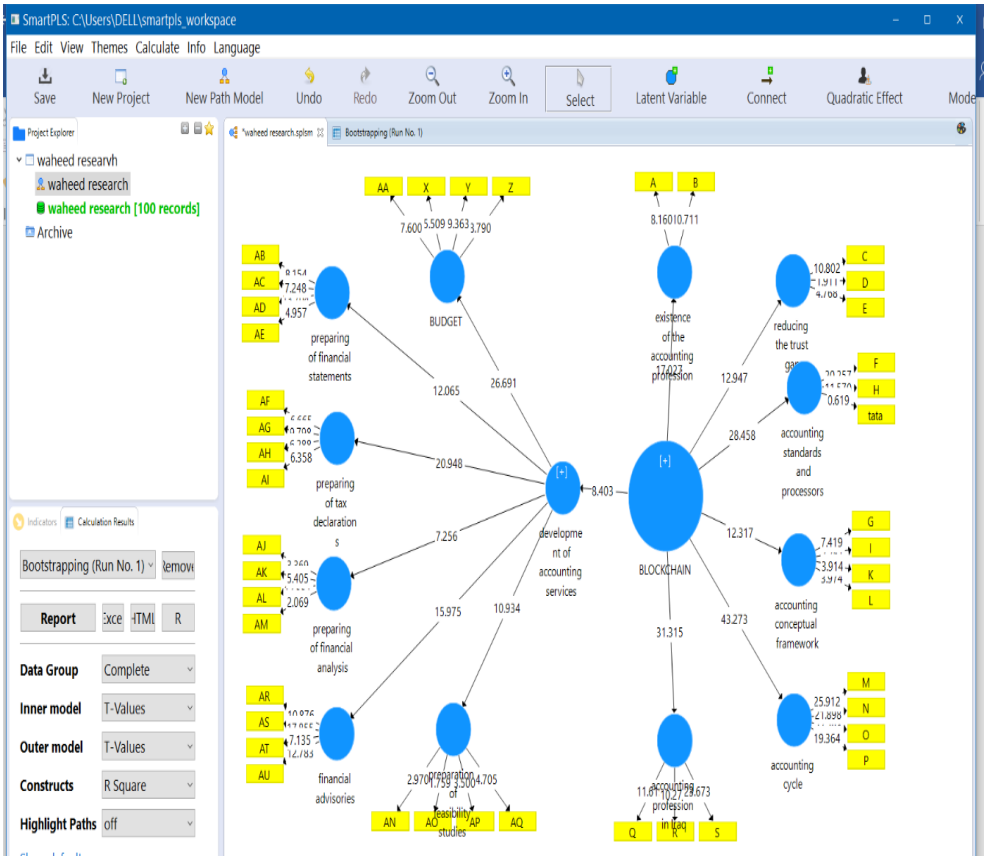

Figure 3: The study model

3.4. Data Analysis

Before starting the hypothesis test, the table should be validated, which is why a pilot study was conducted on a sample of 25 respondents colleagues specialists in accounting and auditing, while they were excluded from the final survey. Data analysis, This analysis was used to verify the reliability and validity of the data and then to test the proposed hypotheses. Preliminary results showed that the model was reliable and testable, and the data were obtained through the construction of an electronic questionnaire for respondents, and Table (2) shows the demographic data of the study sample. Table (2) of the study sample found that 75 were male, while the rest were female. It is also clear that the largest proportion of the sample was in 41-50 group, at a rate of 77, As for the level of Internet use, it was found that the majority of the sample was skilled in using the information technology

Table 2: Demographic Information

Characteristics	**Number of Respondents**	**(N=144)**
Gender	Male	75
	Female	25
Age	<= 40	1
	41 – 50	77
	51 - 60	20
	>=60	2
The level of professional use of the Internet	Well	5
	Good	80
	Excellent	15

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2025, 10(37s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Moreover, the Structural Equation Modelling (SEM) was used to analyze the empirical data and through the SmartPLS 3 program.

1.5 Results of Measurements Model – Convergent Validity

The composite reliability is accepted because it is above 0.70 and the average variance extracted is accepted because of is above 50%, as shown in Table 3:

Table 3 Results of Measurements Model – Convergent Validity

constructs	items	loading	AVE	CR
accounting existence	accounting existence 1	0.765	0.769	0.927
	accounting existence 2	0.717		
accounting gap	accounting gap 1	0.712	0.65	0.81
	accounting gap 2	0.733		
	accounting gap 3	0.716		
accounting standards	accounting framework1	0.735	0.661	0.711
	accounting framework2	0.701		
	accounting framework3	0.723		
accounting framework	accounting standards 1	0.714	0.59	0.794
	accounting standards 2	0.715		
	accounting standards 3	0.783		
	accounting standards 4	0.723		
accounting cycle	accounting cycle1	0.716	0.711	0.715
	accounting cycle2	0.791		
	accounting cycle3	0.721		
	accounting cycle4	0.711		
accounting iraq	accounting iraq1	0.725	0.622	.0.762
	accounting iraq2	0.723		
	accounting iraq3	0.714		
accounting services	accounting services1	0.717	0.715	0.842
	accounting services2	0.769		
	accounting services3	0.781		
	accounting services4	0.742		
budget	budget1	0.728	0.672	0.784
	budget2	0.719		
	budget3	0.729		
	budget4	0.722		
financial statements	financial statementes1	0.732	0.874	0.746
	financial statementes2	0.734		
	financial statementes3	0.755		
	financial statementes4	0.766		
tax declarations	tax declarations1	0.799	0.694	0.789
	tax declarations2	0.781		
	tax declarations3	0.733		

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2025, 10(37s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

	tax declarations4	0.712		
financial analysis	financial analysis1	0.744	0.626	0.765
	financial analysis2	0.712		
	financial analysis3	0.765		
	financial analysis4	0.754		
feasibility studies	feasibility studies1	0.734	0.584	0.842
	feasibility studies2	0.728		
	feasibility studies3	0.755		
	feasibility studies4	0.732		
financial advisory	financial advisory1	0.733	0.764	0.763
	financial advisory2	0.751		
	financial advisory3	0.722		
	financial advisory4	0.745		

According to what was mentioned in Table 3, it should be verified whether it was according to the criteria specified in the literature, as the evidence indicated that the value of the loadings should be greater than 0.60 (Nunnally, 1978), while the values of CA and CR should be greater than 0.70, either the value of AVE must be greater than 0.50 (Flynn et al., 1990) (Hair et al., 1998), so it is clear from this that the results specified in the table are greater than the criteria specified in the literature and therefore this is an indication of the validity of testing the hypotheses proposed in the study model.

1.6 Discriminant Validity

The analysis was carried out to the questions of each axis, so if the value of the axis with itself is higher than its value in the other axes, it is acceptable (See Table 4).

Table 4 Discriminant Validity

	accounting existence	accounting gap	accounting standards	accounting framework	accounting cycle	accounting iraq	accounting services	budget	financial statementes	tax declarations	financial analysis	feasibility studies	financial advisory
accounting existence	0.887												
accounting gap	0.642	0.854											
accounting standards	0.624	0.641	0.843										
accounting framework	0.567	0.564	0.711	0.851.									
accounting cycle	0.598	0.742	0.662	0.654	0.768								
accounting iraq	0.643	0.713	0.564	0.684	0.654	0.841							
accounting services	0.521	0.654	0.635	0.674	0.621	0.711	0.875						
budget	0.435	0.568	0.641	0.625	0.653	0.723	0.71	0.881					
financial statementes	0.784	0.742	0.635	0.654	0.578	0.654	0.721	0.733	0.811				
tax declarations	0.721	0.654	0.654	0.633	0.684	0.712	0.681	0.7425	0.766	0.791			
financial analysis	0.561	0.771	0.633	0.644	0.564	0.689	0.623	0.654	0.734	0.735	0.796		
feasibility studies	0.665	0.655	0.667	0.624	0.521	0.651	0.645	0.6325	0.598	0.743	0.661	0.912	
financial advisory	654	0.632	0.662	0.671	0.532	0.635	0.635	0.684	0.654	0.736	0.637	0.81	0.895

3.7 Results of Hypotheses Testing

T variances analyses have been made and if the result of the p-value is less than 0.005 (See Table 5).

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2025, 10(37s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Table 5 Results of Hypotheses Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
BLOCKCHAIN -> accounting cycle	0.893	0.900	0.021	2.487	0.000
BLOCKCHAIN -> Accounting standards and processors	0.862	0.867	0.031	2.495	0.000
BLOCKCHAIN -> existence of the accounting profession	0.768	0.778	0.049	1.821	0.000
BLOCKCHAIN -> Accounting conceptual framework	0.709	0.723	0.061	1.705	0.000
BLOCKCHAIN -> Accounting profession in Iraq	0.853	0.856	0.029	2.218	0.000
BLOCKCHAIN -> development of accounting services	0.777	0.752	0.092	1.481	0.000
BLOCKCHAIN -> reducing the trust gap	0.743	0.744	0.057	1.101	0.000
development of accounting services -> BUDGET	0.858	0.860	0.030	2.238	0.000
development of accounting services -> financial advisories	0.744	0.746	0.046	1.187	0.000
development of accounting services -> preparation of feasibility studies	0.681	0.692	0.058	1.751	0.000
development of accounting services -> preparing of financial analysis	0.613	0.620	0.088	1.970	0.000
development of accounting services -> preparing of financial statements	0.726	0.723	0.056	1.861	0.000
development of accounting services -> preparing of tax declarations	0.807	0.807	0.038	1.240	0.000

It is clear from Table 5that the above hypotheses are accepted as follows:

1. **H1:** There is a significant impact of this technique on the steps and stages of the accounting cycle as it is expected to disappear entirely such as the registration of accounting entries in the journal and the rest of the steps may be integrated into the electronic accounting system.
2. **H2:** The adoption of this technology will lead to a change in many mechanisms and procedures as well as accounting methods. Their adoption will also lead to the elimination of some standards and the modification of others because they represent the procedural aspect of the accounting profession.
3. **H3:** This technique does not threaten the existence of the accounting profession in general, but the role of the profession will go to the advisory side rather than preparing financial lists.

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Journal of Information Systems Engineering and Management
2025, 10(37s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

4. **H4:** The conceptual framework for accounting will not be affected radically and may witness minor adjustments in some concepts, assumptions, hypotheses, and policies as the electronic currency will appear such as Bitcoin.
5. **H5:** This technology will have an impact on the accounting profession in Iraq as it is expected that it will be the solution to the problems suffered by the profession, especially the lack of sufficient professional accounting skills.
6. **H6:** This technology will have an impact on the development of services provided by the accounting profession as these services will be provided with high quality and at cost, effort and less time.
7. **H7:** The degree of safety and reliability in accounting services will be much higher under the use of blockchain technology, which will enhance confidence in the services provided by the profession and thus reduce the trust gap in the accounting services experienced by the accounting profession today.
8. **H8:** The adoption of this technology will lead to the development of the process of budgeting through transparency and participation in the preparation of the budget, as well as facilitate the transfer of allocations and liquidity to the subsidiary units, whether in the government or private sector.
9. **H9:** The adoption of this technology will lead to the development of the process of providing advisory services as it will be done electronically to customers, which will lead to the provision of high quality and less time and cost. It will be the focus of the future work of accountants.
10. **H10:** The adoption of this technology will lead to the development of the process of preparing economic feasibility studies as it will provide transparency as well as the degree of confidence in the data that depends on the preparation of these studies because it will be through a blockchain network.
11. **H11:** The adoption of this technology will lead to the development of the process of preparing financial analysis if it will be prepared in high quality, time, cost and effort because all data is available through the blockchain network and the degree of confidence in it will be high.
12. **H12:** The adoption of this technology will lead to the development of the process of preparing financial statements because the data will be available through the blockchain network and the disclosure of information will be through financial statements and through the network itself.
13. **H13:** The adoption of this technology will lead to the development of the process of preparing tax declarations because the degree of reliability in the reality of sales and purchases is very high because all of this is through a blockchain network

4. Conclusion

By examining the philosophical and field problem of research, the following conclusions were reached:

- The use of blockchain technology will not lead to the disappearance or decay of the accounting profession but will see a significant change in its role towards the users of financial statements as most of its focus will be on providing accounting consultancy.
- The use of blockchain technology will improve the quality of services provided by the accounting profession as it will be carried out through a blockchain technology network, which will be built following high-quality accounting standards and of course by virtual accounting companies with a high level of experience and skill accounting experts.
- The use of blockchain technology will not radically affect the conceptual framework of accounting or accounting theory but will see some modifications in principles and policies and the bitcoin currency will be used.
- The use of blockchain technology will lead to the need for new international accounting standards to explain how accounting processes will be conducted under this technology.
- The advantages of using blockchain are clear and how its use will affect reporting in the future is apparent. This new technology shows how the industry will be transformed to allow more of a proactive approach to implementing accounting standards
- The use of blockchain technology will reduce the trust gap in the accounting profession, which is the main challenge for it, as the level of security provided by this technology will give users of financial statements confidence in the validity of the data they contain.

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

- The use of blockchain technology will reduce the cost of providing accounting services as the recording of economic events will be limited to one party and confirmation from the other party and the role of the mediator will disappear.
- The adoption of this technology will lead to the development of electronic services as its adoption electronically will improve the quality of all those services as well as reduce time and effort as well and lead to transparency and real-time disclosure to users of financial statements.
-

5. Recommendations

Through these findings, the following recommendations can be made:

- Develop electronic accounting applications so that they can work within Blockchain technology
- Continue research in blockchain accounting technology to learn how to use this technology to increase the quality of services provided by this profession.
- The Federal Financial Supervisory Office and the Iraqi Accountants and Auditors Association form a central committee to provide resources to provide this technology in the provision of accounting services to keep pace with recent developments and not to lag behind other countries that have sought to adopt this technology.
- The International Accounting Standards Board (IASB) issued accounting standards explaining the ways blockchain technology is adopted as well as demonstrating its impact on components of the accounting profession.
- Work to standardize electronic currencies with a specified number of currencies and document those currencies by establishing controls and requirements for issuing those currencies so as not to be a fertile area for manipulation and fraud.
- Working on the preparation of the blockchain network at the level of the Arab world and working on the issuance of an Arabic electronic currency that contributes to the organization and development of trade between Arab countries.
- Directing the accounting departments in Iraqi universities to the need to teach accounting through Blockchain networks within the bachelor's curriculum for the graduate to deal with it after graduation.

References

[1] Alfartoosi, A., Jusoh, M. A., Mohsin, H. J., & Yas, H. (2020). The effect of e-accounting and mediated by internal control system on the performance of SME in Iraq. American Journal of Business and Operations research (AJBOR), 3 (1), 05-38.

[2] Byström, H. (2019). Blockchains, Real-time Accounting, and the Future of Credit Risk Modeling. Ledger, 4. https://doi.org/10.5195/ledger.2019.100

[3] Coyne, J. G., & McMickle, P. L. (2017). Can blockchains serve an accounting purpose? Journal of Emerging Technologies in Accounting. https://doi.org/10.2308/jeta-51910

[4] Cai, C. W. (2021). Triple-entry accounting with blockchain: How far have we come?. Accounting & Finance, 61(1), 71-93.

[5] Dai, J., & Vasarhelyi, M. A. (2017). Toward Blockchain-Based Accounting and Assurance. Journal of Information Systems, 31(3), 5–21. https://doi.org/10.2308/isys-51804

[6] Deloitte, G. (2006). Optimizing the Role of Internal Audit in the Sarbanes Oxley Era. Deloitte Development LLC.

[7] Fanning, K., & Centers, D. P. (2016). Blockchain and its coming impact on financial services. Journal of Corporate Accounting & Finance, 27(5), 53-57.

[8] Fullana, O., & Ruiz, J. (2020). Accounting Information Systems in the Blockchain Era. SSRN Electronic Journal, 1–15. https://doi.org/10.2139/ssrn.3517142

[9] Gulin, D., Hladika, M., & Valenta, I. (2019). Digitalization and the Challenges for the Accounting Profession. ENTRENOVA-ENTerprise REsearch InNOVAtion, 5(1), 428-437.

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

[10] Garcia, M., Bessani, A., & Neves, N. (2019, December). Lazarus: Automatic management of diversity in bft systems. In Proceedings of the 20th International Middleware Conference (pp. 241-254).
[11] Grigg, I., 2005, Triple Entry Accounting. Available at : http://iang.org/papers/triple_entry.html.
[12] Hassan, E. A., Rankin, M., & Lu, W. (2014). The development of accounting regulation in Iraq and the IFRS adoption decision: An institutional perspective. The International Journal of Accounting, 49(3), 371-390.
[13] Hair Jr, J. F., Bush, R. P., & Ortinau, D. J. (2003). Marketing research. McGraw-Hill/Irwin.
[14] ICAEW. (2020). Blockchain and the future of accountancy. https://www.icaew.com/technical/technology/blockchain/blockchainarticles/blockchain-and-the-accounting-perspective (Accessed 20 June 2021).
[15] Karajovic, M., Kim, H. M., & Laskowski, M. (2019). Thinking Outside the Block: Projected Phases of Blockchain Integration in the Accounting Industry.
[16] Kokina, J., Mancha, R., & Pachamanova, D. (2017). Blockchain: Emergent industry adoption and implications for accounting. Journal of Emerging Technologies in Accounting. https://doi.org/10.2308/jeta-51911
[17] Lee, E., & Yoon, Y. I. (2019). Project management model based on a consistency strategy for a blockchain platform. Proceedings - 2019 IEEE/ACIS 17th International Conference on Software Engineering Research, Management and Application, SERA 2019. https://doi.org/10.1109/SERA.2019.8886776
[18] Leila, A.-F. (2013). The environment of the accounting profession and the indicators of its adaptation to technology InformationTitle. Baghdad College of Economics University.
[19] Lewtan, J., McManus, J., & Roohani, S. (2018). Blockchain: Opportunity to Improve Financial Reporting and Corporate Governance Title.
[20] Napier, C. J. (2001). Accounting history and accounting progress. Accounting history, 6(2), 7-31.
[21] Porwal, A., & Hewage, K. N. (2013). Building Information Modeling (BIM) partnering framework for public construction projects. Automation in construction, 31, 204-214.
[22] Schmitz, J., & Leoni, G. (2019). Accounting and Auditing at the Time of Blockchain Technology: A Research Agenda. Australian Accounting Review. https://doi.org/10.1111/auar.12286
[23] Tan, B. S., & Low, K. Y. (2019). Blockchain as the Database Engine in the Accounting System. Australian Accounting Review. https://doi.org/10.1111/auar.12278
[24] Wang, Y. (2017). Designing Privacy-Preserving Blockchain-Based Accounting Information Systems. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2978281
[25] Yu, T., Lin, Z., & Tang, Q. (2018). Blockchain: The Introduction and Its Application in Financial Accounting. Journal of Corporate Accounting & Finance, 29(4), 37–47. https://doi.org/10.1002/jcaf.22365
[26] Zhang, Y., Xiong, F., Xie, Y., Fan, X., & Gu, H. (2020). The impact of artificial intelligence and blockchain on the accounting profession. Ieee Access, 8, 110461-110477.
[27] Zeff, S. A. (2003). How the US accounting profession got where it is today: Part I. Accounting Horizons, 17(3), 189-205.

Copyright © 2024 by Author/s and Licensed by JISEM. This is an open access article distributed under the Creative Commons Attribution License which permitsunrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.