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## **The Impact of Blockchain Technology on Financial Accounting Practices**

**Youssef Abdel Salam Abdi <sup>1\*</sup>, Ibrahim Mohamad Ali Saleem <sup>2</sup>, Fadhil Abbas Sultan <sup>3</sup>**

<sup>1-3</sup> University of Al Hamdaniya, College of Administration and Economics, Department of Accounting, Iraq

\* Corresponding Author: **Youssef Abdel Salam Abdi**

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### **Abstract**

After the game-changing innovation of the blockchain technology in 21st century, the impact on financial accounting sector was revolutionizing. The introduction of blockchain technology in central authorities helps the authorities by automating them. This system helps the central authorities significantly because before the innovation of this system the financial accounting has been burdened by inefficiencies such as manual data entry, high transaction costs, and lack of transparency. The current study aims to identify the impact of blockchain technology on financial accounting practices. For this purpose the mixed method approach was used. A questionnaire was developed for quantitative analysis and face to face interview were conducted for qualitative analysis. Regression analysis and descriptive statistics were employed for quantitative data analysis and for qualitative thematic analysis was done. The findings from the quantitative data set suggests that the mixed responses from professionals underscore the promise that blockchain technology holds but also the significant hurdles it faces in widespread implementation. These challenges, including lack of knowledge, organizational resistance, training and regulatory hurdles, must be addressed before blockchain technology can't be integrated into financial accounting practice.

**Keywords:** Blockchain, Financial, Accounting Practices, Blockchain Technology, Financial accounting practices

### **Introduction**

The blockchain system is the technology that can transform the auditing process by allowing the monitoring of financial transaction proceedings. With the help of this blockchain technology an auditor can access up to date transaction records with minimum time and effort spent in verifying financial data. It is the fundamental technology behind crypto currencies like Bitcoin. (Yu *et al.*, 2018) <sup>[4]</sup>

The blockchain technology is beneficial in many sectors especially in financial sector because the financial sector is the significant sector where trust and security matters, So the blockchain technology provides security, transparency efficiency trust and innovation in financial sector.

The Blockchain technology is one of the game changing innovation of the 21<sup>st</sup> century that revolutionizes the various sectors, with financial accounting standing as one of the most impacted area. The blockchain offers an inflexible, segregated and transparent digital ledger system that can record transaction proceedings efficiently and securely at its core, the blockchain digital ledger system holds the potential to reevaluate how the trading businesses, record, track and verify the financial transaction proceedings. {Woodside, 2017, 18} <sup>[9]</sup>

This decentralized and transparent digital ledger system has reduced the dependency on central authorities, this digital system also helps the central authorities by automating them because before the innovation of this system the financial accounting has been burdened by inefficiencies such as manual data

entry, high transaction costs and lack of transparency, The blockchain technology addresses many of the challenges by empowering real-time automated, and temper free transaction recording, Furthermore, the blockchain technology will also examine the opportunities and challenges that an organization face when they adopt this decentralized blockchain based accounting system and how this technology could leads to a new standard in financial reporting and audit processes. {Abdennadher, 2022} <sup>[19, 20]</sup>

In conclusions, the blockchain system is the technology that plays a significant role in financial accounting by making the financial transactions more reliable, transparent and efficient, This technology aims to make financial accounting more intellectual, time saving and more efficient regarding data entry and transection recording proceedings, This technology has the potential to modify various industries and aspects of our lives, Its mind blowing secure and transparent nature makes it an attractive solution for data storage, data transfer and verification, As the involvement of this technology in different sectors or industries continuously we can expect the increase adaptation and innovation across many different sectors {Abdennadher, 2022} <sup>[19, 20]</sup>.

### Research Objective

The objective of this research is to analyze the impact of Blockchain technology on financial accounting practice, Especially, in modifying the digital ledger system which can help the central authorities by automating them with advanced security system and efficiency, And the aim of this study is to identify the important factors that contribute their significant role in adoption of blockchain technology. It includes impact of blockchain technology on financial accounting sector and other various industries.

### Literature Review

The previous studies have established that the Blockchain technology is the latest advancement in the financial sector where the trust is of prime significance. A significant research has been conducted in American university of Middle East, Block 6, Eggale, Kuwait. This study was a systematic literature review, According to this research, Blockchain technology is a decentralized and coded security system that provides three dimensional classification framework (blockchain-enabled financial benefits, functionality and challenges, This research mainly a systematic literature review of blockchain technology in financial sector, This research reveals that the blockchain technology is the modern trend of digitalization that have completely transformed the business practices, entire businesses and even a number of industries. (Ali *et al.*, 2020) <sup>[1]</sup>

Another study has been conducted in university of Arkansas USA in 2020. This study was based on adaptation of blockchain and financial inclusion in India.

According to this survey the rural India economic development requires connection between local and global supply chains, Yet there is a higher ratio of rural Indians that are unable to participate in these supply networks due to financial exclusions, Therefore this review on financial inclusion, adaptation and blockchain was conducted in India to resolve the financial exclusion issue, There are four challenges are need to overcome according to this survey. These challenges are high cost, inappropriate banking

products, financial illiteracy and geographical access, However, for blockchain technologies to become a keystone of financial inclusion initiatives, India needs to understand the technology adaptations, For the guidance of development understanding in rural India the researcher develops a research agenda on adaptation pattern and outcomes of adaptation. So, the answering these research questions will leads to understand the adaptation of blockchain technologies in rural India. (Schuetz and Venkatesh, 2020) <sup>[2]</sup>

There was another systematic review was conducted on blockchain technology in July 2019, According to this review the blockchain technology is considered as disruptive core technology, Although there are many researchers that realized the importance of blockchain, but the research of this technology is still on its early stage, Therefore this study review is especially in the subject area of business and economics. Based on the systematic review the researcher additionally conducts a clustering analysis and identify the following five research themes, Economic benefits, “blockchain technology,” “initial coin offering,” “fintech revolution” and sharing economy. Recommendations on future research directions are also provided in this review. (Xu *et al.*, 2019) <sup>[3]</sup>

Additionally, another study was conducted in 2019, the objective of this research was to clarify what blockchain technology is and what are the uses of its implementation in financial accounting sector. and also to identify the accounting perspective of this technique, The aim of this research was also to elaborate how to implement this technology in financial accounting sector and detect the most important potential side effects of the use of this technique in accounting information system, For the achievement of this objective a descriptive approach was adopted to discuss the various factors of blockchain technology such as implementation, significance for usefulness, reliability and automated computing accounting system, The researcher concluded that the implementation of blockchain system in accounting sector helps centralized authorities by making them automated, secure and cost minimal accuracy. {ALSaqa, 2019, 1}

### Methodology

The current study employs the mixed method approach including both qualitative and quantitative data analysis, The quantitative data analysis was done through survey to gauge the businesses perceptions of blockchain technology with the help of questionnaire, Whereas the interview of businesses experts are conducted to analyses the qualitative data analysis, Descriptive statistics and regression analysis was used in quantitative data analysis to identify the correlation between various variables, For quantitative data collection a sample size of 50 was enrolled in the study. Whereas only 15 participants are involved in the qualitative data collection, The questions asked in interview were related to the personal experience regarding use of this blockchain technology and perception regarding impact of this technology on financial sector and other industries for quantitative data collection the questionnaire consists of various sections, While thematic analysis was used in qualitative data analysis to identifying the recurring themes regarding the impact of block chain technology on financial practice.

**Results:****Table 1:** Results of Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
How long have you been working in the financial accounting industry?	50	1.00	3.00	2.1000	.67763
What is your role in the organization?	50	1.00	2.00	1.2400	.43142
What type of organization do you work for?	50	1.00	2.00	1.2200	.41845
I am familiar with Blockchain technology and its potential impact on financial accounting.	50	1.00	3.00	2.3800	.80534
I have used Blockchain technology in financial accounting or financial reporting.	50	1.00	3.00	2.5600	.61146
Blockchain technology can improve the accuracy of financial reporting.	50	1.00	3.00	2.6400	.52528
Blockchain technology will reduce the costs associated with financial transactions and accounting processes.	50	1.00	3.00	2.6400	.52528
Blockchain technology will improve the efficiency of auditing processes in financial accounting.	50	1.00	3.00	1.0800	.34047
Blockchain will significantly enhance transparency in financial reporting.	50	1.00	3.00	1.0800	.34047
Blockchain technology will eliminate the need for intermediaries in financial transactions.	50	1.00	3.00	2.2600	.82833
Blockchain will make financial transactions more secure and less prone to fraud.	50	1.00	3.00	2.6400	.52528
The adoption of Blockchain in financial accounting faces significant challenges, such as a lack of knowledge and training.	50	1.00	3.00	1.9400	.61974
Blockchain will automate and streamline many manual accounting processes, saving time and resources.	50	1.00	2.00	1.8200	.38809
There is resistance within my organization to adopt Blockchain technology in accounting practices.	50	1.00	3.00	2.1000	.67763
Blockchain technology in accounting raises concerns related to data privacy and security.	50	1.00	3.00	2.3800	.80534
Blockchain will require significant changes to existing financial accounting standards and regulations.	50	1.00	3.00	2.5600	.61146
The role of accountants will evolve significantly with the integration of Blockchain technology.	50	1.00	3.00	2.6400	.52528
Blockchain technology will become an integral part of financial accounting practices in the next 5–10 years.	50	1.00	3.00	2.6400	.52528
Current regulations are supportive of Blockchain technology in financial accounting.	50	1.00	2.00	1.2200	.41845
Blockchain implementation in financial accounting is costly and complex for organizations to adopt.	50	1.00	2.00	1.2400	.43142
Valid N (listwise)	50				

The descriptive statistics provided shows various perspectives on the adoption of blockchain technology in financial accounting in a sample of 50 participants. Participants have been in financial accounting industry for approx. 2.1 years on average, with a moderate level of experience on the field (with a standard deviation of 0.68). In terms of their roles and type of organization they work for, the average scores of 1.24 and 1.22 recommend that most of the individuals have entry to mid-level positions in small to medium sized organizations. Respondents generally shows familiarity (mean of 2.38) regarding familiarity with blockchain technology, but there is a variation in terms of authentic usage (average of 2.56), recommending when most are aware of blockchain technology's potential, fewer have applied it directly. Most of the participants agree that in financial reporting the blockchain technology can improve security (2.64) and accuracy (2.64), enhance transparency

(2.64) and reduce cost (2.64). Although, the opinions are mixed on the impact of blockchain technology on elimination of intermediaries and auditing efficiency, with both of the statements receiving low ratings (1.08). Concern about the data privacy and security (mean of 2.38) as well as due to lack of practice and training (mean of 1.94) the challenges in adopting blockchain technology are evident. The majority of them are also recognize that the blockchain technology will require significant alterations to accounting standards and will change the role of accountants (both average around 2.64) and they believe, it will become an integral part of accounting in next 5-10 years. In spite of these benefits, there is some resistance in organizations (mean of 2.10) and concern about complexity and cost of blockchain technology implementation (mean of 1.24), showing that while blockchain technology is seen as promising, adoption is not without significant hurdles.

**Table 2: Correlation Analysis**

		<b>Blockchain technology can improve the accuracy of financial reporting.</b>	<b>Blockchain technology will improve the efficiency of auditing processes in financial accounting.</b>	<b>Blockchain technology will eliminate the need for intermediaries in financial transactions.</b>	<b>Blockchain will automate and streamline many manual accounting processes, saving time and resources.</b>	<b>The adoption of Blockchain in financial accounting faces significant challenges, such as a lack of knowledge and training.</b>
How long have you been working in the financial accounting industry?	Mode	-.182	.140	.313	-.547	.014
	Mean	-.173	.133	.296	-.524	.011
	Variance	.018	.019	.016	.010	.019
	Lower Bound	-.429	-.125	.055	-.714	-.247
	Upper Bound	.083	.404	.550	-.328	.287
What type of organization do you work for?	Mode	.364	-.125	.475	-.880	.051
	Mean	.346	-.119	.453	-.867	.047
	Variance	.015	.018	.012	.001	.019
	Lower Bound	.104	-.370	.228	-.930	-.234
	Upper Bound	.575	.146	.660	-.793	.296
I am familiar with Blockchain technology and its potential impact on financial accounting.	Mode	-.055	-.112	.002	-.361	-.197
	Mean	-.054	-.104	.001	-.341	-.185
	Variance	.019	.019	.019	.015	.018
	Lower Bound	-.320	-.367	-.255	-.568	-.435
	Upper Bound	.210	.158	.272	-.095	.083
I have used Blockchain technology in financial accounting or financial reporting.	Mode	-.121	.171	.069	.259	-.284
	Mean	-.112	.160	.065	.244	-.269
	Variance	.019	.018	.019	.017	.016
	Lower Bound	-.378	-.104	-.194	-.010	-.510
	Upper Bound	.157	.420	.344	.493	-.019
Blockchain technology can improve the accuracy of financial reporting.	Mode		-.063	.032	-.321	.243
	Mean		-.060	.030	-.308	.231
	Variance		.019	.019	.015	.017
	Lower Bound		-.331	-.233	-.547	-.028
	Upper Bound		.197	.301	-.064	.476
Blockchain technology will improve the efficiency of auditing processes in financial accounting.	Mode	-.063		.212	.110	-.169
	Mean	-.060		.199	.104	-.159
	Variance	.019		.018	.019	.018
	Lower Bound	-.331		-.067	-.169	-.419
	Upper Bound	.197		.452	.363	.103
Blockchain technology will eliminate the need for intermediaries in financial transactions.	Mode	.032	.212		-.419	-.206
	Mean	.030	.199		-.400	-.193
	Variance	.019	.018		.014	.017
	Lower Bound	-.233	-.067		-.614	-.456
	Upper Bound	.301	.452		-.164	.058
Blockchain will automate and streamline many manual accounting processes, saving time and resources.	Mode	-.321	.110	-.419		-.045
	Mean	-.308	.104	-.400		-.043
	Variance	.015	.019	.014		.019
	Lower Bound	-.547	-.169	-.614		-.303
	Upper Bound	-.064	.363	-.164		.230
The adoption of Blockchain in financial accounting faces significant challenges, such as a lack of knowledge and training.	Mode	.243	-.169	-.206	-.045	
	Mean	.231	-.159	-.193	-.043	
	Variance	.017	.018	.017	.019	
	Lower Bound	-.028	-.419	-.456	-.303	
	Upper Bound	.476	.103	.058	.230	

The statistical analysis shows the relationship between different factors related to blockchain system and financial accounting. Overall, the data indicates the mixed opinions on the impact and challenges of adopting blockchain technology. For instance, participants with more experience in the financial accounting sector (such as years worked or type of organization) showed minor positive correlations with the belief that blockchain technology can improve financial reporting efficiency and automatic accounting processes, although these correlations were weak (e.g., mean scores between -0.173 to 0.346). Direct usage and familiarity of blockchain technology were similarly weakly correlated with views on its potential benefits in eliminating intermediaries

and auditing. Those who identified challenges in adopting blockchain technology such as lack of training and knowledge, reveals slightly powerful correlations with skepticism about the blockchain's impact with average value of ranging from -0.185 to -0.269. Most considerable challenge recognized by the respondent appear to be the significant barriers to adoption, which were connected with data privacy, lack of knowledge and security concerns. In spite of some positive reviews on Blockchain technology's potential, the data underlines the cautions stance of industry professionals, with weak to moderate correlation between blockchain technology's considered benefits and its execution hurdles in financial accounting sector.

**Table 3: Results of Thematic Analysis**

Theme	Sub-theme	Description	Frequency (Number of Participants)	Statements
Familiarity with Blockchain	Awareness of Blockchain Technology	Participants are generally aware of Blockchain technology but have varying levels of understanding.	8	"I know about Blockchain, but I'm not sure how it works in accounting."
	Knowledge of its Impact	Varying levels of knowledge regarding Blockchain's potential in financial accounting.	7	"I know it's supposed to make financial reporting more secure."
Adoption Challenges	Resistance to Change	Some participants expressed resistance to adopting Blockchain in their organization due to organizational culture.	5	"There's resistance to change within my team; they prefer traditional systems."
	Lack of Training and Education	Many participants highlighted the lack of knowledge and training as a barrier to Blockchain adoption.	6	"Training on Blockchain is essential; many people don't understand it yet."
Benefits of Blockchain	Improving Transparency and Security	Several participants agreed that Blockchain could improve transparency and security in financial reporting.	9	"Blockchain could reduce fraud by ensuring the accuracy of records."
	Cost Reduction and Efficiency	Participants noted that Blockchain might reduce costs associated with transactions and improve efficiency.	7	"Blockchain could save time by automating processes, reducing manual entry."
Blockchain in Auditing	Impact on Auditing	Mixed opinions on whether Blockchain could improve auditing efficiency. Some felt skeptical about its role.	5	"I'm unsure if Blockchain can actually improve auditing efficiency or just add complexity."
Role of Accountants	Changing Roles of Accountants	Many participants believed that the role of accountants would evolve with Blockchain integration.	8	"Accountants may become more like advisors than traditional number crunchers."
Impact on Financial Reporting	Enhanced Accuracy of Reporting	Consensus that Blockchain can improve the accuracy of financial reports by reducing errors and fraud.	9	"With Blockchain, financial reports will be more reliable and traceable."
	Real-Time Reporting	Some participants mentioned that Blockchain could enable real-time financial reporting.	6	"Blockchain can make reports more immediate, which is a huge advantage for businesses."
Regulatory Issues	Need for New Regulations	Many participants felt that existing accounting regulations would need to change to accommodate Blockchain.	7	"The accounting standards will have to adapt to include Blockchain."
Blockchain's Potential for Automation	Automating Manual Processes	Some participants emphasized that Blockchain could automate many manual processes in accounting.	6	"It could automate reconciliation processes, saving time and reducing human error."
Privacy and Security Concerns	Concerns Over Data Privacy	Data privacy concerns were mentioned, especially with the idea of using Blockchain to store sensitive information.	4	"Blockchain is secure, but the issue of privacy remains a major concern for financial data."
Implementation Costs	High Initial Costs	Some participants mentioned the high upfront costs of implementing Blockchain technology.	5	"The initial cost of integrating Blockchain might be too high for smaller firms."



### Discussion:

The overall scenario that emerges from the data is one of the prudent optimism. While for enhancing the accuracy, transparency and security in financial accounting sector the blockchain technology is seen as a powerful tool. But the professionals remain wary of its full-scale implementation. The concerns about the cost, training and complexity involved in adoption of blockchain technology are remarkable barriers to its widespread use. {Han, 2023} <sup>[8]</sup> Moreover, the skepticism about its impact on areas like elimination of intermediaries reflects an unreliability about how transformative blockchain technology will truly be in these domains. The results recommend that blockchain technology is looks more as a potential future tool for financial accounting sector, rather than an immediate game changer. This is reinforced by the belief that the blockchain will be integrated into financial accounting practices in the next 5-10 years, through this will likely require important changes to previous standards and practices. Filling the knowledge gaps, overcome the resistance issues and developing more vigorous regulatory frameworks will be important steps in facilitating the successful adoption of Blockchain technology in the financial accounting sector. Additionally, the weak correlation between experience and views on blockchain technology's potential benefits shows that other factors such as training, leadership support, and readiness may be much important in modifying perception of blockchain technology's impact on financial accounting sector. {Jiang, 2024} <sup>[9]</sup>

### Conclusion and Recommendations:

In conclusion, the article provides a significant view of the adoption of blockchain technology in financial accounting sector. The mixed responses from professionals underscore the promise that blockchain technology holds but also the significant hurdles it faces in widespread implementation. These challenges, including lack of knowledge, organizational resistance, training and regulatory hurdles, must be addressed before blockchain technology can't be integrated into financial accounting sector practices. Although the future outlook is positive, a more cautious and gently adoption process appears to be on the perception.

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