

# Blockchain Technology in Accounting: A Paradigm Shift in Transparency and Efficiency in the UK

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## Abstract

*Traditional accounting processes face challenges like data manipulation, fraud, and inefficiencies in the processes. Blockchain in accounting provides full transparency, where auditors, accountants, and clients can have access to identical ledgers for verifying the information. To evaluate the impact of Blockchain technology on transparency and efficiency in the accounting profession in the United Kingdom. This research follows a quantitative research method. The survey method has been used for collecting data from accountants, auditors, CFOs, financial analysts, and others. In this study, questionnaires have been sent to the accounting professionals from the big four accounting firms in London, United Kingdom. The raw data has been gathered from a total of 156 people participants from the accounting firms. A questionnaire has been used in the study, where various independent and dependent variables are identified. The results show that Blockchain security, cost, adoption, and implementation have a positive and significant influence on transparency. On the other hand, Blockchain security, cost, adoption and implementation, compliance, and performance have a positive and significant influence on efficiency. Lastly, it is identified that Blockchain efficiency and transparency have a positive and significant influence on stakeholder trust among accounting firms in London, UK. The first policy recommendation is promoting the adoption of Blockchain among accounting firms. Tax incentives can be provided to accounting organizations that are heavily investing in Blockchain technology. Besides, regulatory frameworks, development programs, and comprehensive guidelines can help in guiding the adoption of Blockchain technology among accounting firms.*

**Keywords:** *Blockchain Technology, Accounting, Transparency, Efficiency, Stakeholder's Trust.*

## Introduction

In recent times, the accounting industry has experienced changes due to technology. One of the underlying technologies for cryptocurrency like Bitcoin, Blockchain has been considered as the disruptive technologies after internet. Blockchain technology (distributed ledger technology DLT) is referred to a system where the transaction records stored in blocks are kept across various computers that are linked to peer-to-peer network using algorithm for verification of the transaction. Blockchain is considered as a game changer for different industries, which has the potential for transforming the structures of market and contemporary business models (Schmitz & Leoni, 2019). It has implications for data, transmission, processing, security and storage. Blockchain in accounting provides full transparency, where auditors, accountants, and clients can have access to identical ledger for verifying the information. Many big four firms, and financial institutions have noticed the potential of Blockchain and actively engaged in development, experiment and investment. For instance, Deloitte considered the first step in launching Blockchain initiative in 2014 (Liu, Wu & Xu, 2019). In 2017, Ernst & Young have become the first advisory firm for accepting bitcoin and it has also rolled number of applications for facilitating the commercial use of Blockchain technology.

The traditional accounting and auditing practises questions, the integrity and accuracy of the financial reporting, which is often noticed as there is lack of transparency, inefficiencies and vulnerability to manipulation. There are persistent challenges in accounting industry related to efficiency and transparency. Ajayi-Nifise et al. (2024) noted that the implementation of Blockchain in accounting helps in the adoption of triple entry accounting principle, which enhances transparency and integrity of financial records. Traditional accounting processes faces challenges like data manipulation, fraud and inefficiencies in the processes. The triple entry framework is different from the traditional double entry system, which incorporates an additional layer of verification which helps in providing more transparent and robust record of financial transactions. However, despite the adoption of blockchain in the accounting sector of the

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United Kingdom, there is under-explored or limited studies showing the ways BT enhances efficiency and transparency in accounting practices.

#### *Research Objectives are as Follows*

To evaluate the impact of Blockchain technology on transparency in the accounting profession in the United Kingdom.

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Singh (2023) noted that many accounting procedures and the means of reporting have changed due to embracing technology. Following the double entry and single-entry ledger system, accounting has evolved and moved to the third phase, which is due to the emergence of Blockchain technology that is triple entry ledger system. Blockchain technology is a unique ledger technology which have the capacity for replacing the ledger centric institutions that have been managing the trust for hundreds of years. Thus, it becomes crucial for analysing the Blockchain technology in respect of accounting. This study is focused on evaluating the changes in the accounting practises due to the Blockchain technology. Thus, for assessing the changes in the accounting practises, transparency and efficiency has been the prime focus of this study. This research is crucial in highlighting the ability of the Blockchain in enhancing efficiency and transparency in accounting practises, particularly within the United Kingdom. This study also serves as a valuable resource for the accounting firms and accounting professionals by offering insights for integrating and adapting emerging technologies.

## **Literature Review**

### *Underlying Theories and Key Concepts*

#### *Blockchain Basics*

Blockchain technology since the inception has evolved into a crucial tool mainly in the field of accounting. Blockchain technology is a decentralized database system reliable and autonomous, which is characterized by the capability for maintaining temper-proof record of transactions. Blockchain has reshaped the ways data is verified, stored and transacted leading to advancement in transparency, security and efficiency. Ajayi-Nifise et al. (2024) highlighted that the blockchain was emerged initially with the development of cryptocurrencies, where the Bitcoin was the most notable example. However, the application of blockchain extent beyond cryptocurrencies consisting of different domains like public key infrastructure (PKI), smart contracts and others. Blockchain enhancer the functionality of the internet-based application, which addresses the issues in the current PKI paradigm. This consist of improvement in the management and security of digital identities, which is helpful in respect of online communications and transactions.

#### *Technology Acceptance Model (TAM)*

Technology acceptance model (TAM) aims at the recognition and beliefs of individuals related to new technology. TAM is dependent upon two aspects which impact the attitude of the individuals related to the technology that is perceived ease of use and perceived usefulness (Singh, 2023). Perceived ease of use is the effort that is needed by an individual for using the new technology. On the other hand, perceived usefulness is the extent to which the new technology can increase the performance of the individual. In this study, the prime focus is the technological skills of the accountants. Thus, the accountants who considered the technology to be difficult (easy) in understanding and using, main perceive blockchain as problematic (easy) (Singh, 2023). Further, the accountants who have negative or positive experience related to the technology process may have negative or positive attitude towards the blockchain. Thus, the knowledge and beliefs of the accountants related to the blockchain processes from the previous experiences within the sector or the social environment can impact the attitude of the accountants.

## *Empirical Evidence from Past Studies*

### *Technology and Accounting*

Technology has significantly grown throughout the years that influences the growth of the businesses. Technology advancements have influence on accounting professionals and practices, which enables them in improving the accounting information processes. Singh (2023) noted that the emerging technology has contributed towards the accounting profession and identified that accuracy and efficiency has been enabled by technology in the accounting process. Similarly, Scott (2009), also agrees that technology advancements have influence on the accounting processes but raises questions related to the influence which might be negative or positive. Al Natour (2021) argued that flexibility and speed have effect on accounting, however faithful representation and relevance is affected by technology in accounting.

Technological developments recently have impacted accounting practices, where the trends include big data, cloud computing and data mobility, which has changed the knowledge, products and services. Blockchain technology is one of the innovations that has the potential for improving the timeliness and trustworthiness of information (Singh, 2023). The author noted that demand for more reliable, transparent and efficient bookkeeping method increased due to invention of technologies.

### *Blockchain Technology in Accounting*

Gomez-Trujillo, Velez-Ocampo and Gonzalez-Perez (2021) acknowledged that with changes in the dynamics, relations and actors within the industries the technology is focusing on the issues like trust, privacy and transparency which has become relevant for the organizations and people. Blockchain is the database of records or ledger for all the transactions shared among participating parties. It is noted that the decentralized network and trusted interactions are the main aspects of the system. Traditionally the security of information has been dependent upon the capacity of an individual in keeping it safe. However, this is now changed as blockchain is such a system which can help in storing the information in a decentralized and independent manner, which is beyond the ability of the individual or entity in providing safety. Blockchain provides secure and trusted economic transactions. For example, the relationship between the trust and blockchain has been analysed through a search on web of science in 2020, where about 48 articles highlighted the terms trust and blockchain together (Gomez-Trujillo, Velez-Ocampo & Gonzalez-Perez, 2021). Further, in respect of security, Yu, Lin and Tang (2018) pointed out that the Blockchain has advantages, which include that the blockchain ensures transparency and information openness. Further, the distributed storage helps in managing the difficulties, where it is challenging for all nodes to be destroyed and attacked at the same time, which helps in ensuring security of information. The mechanism also lowers the probability of fraud, which helps in guaranteeing the reliability and authenticity of information in Blockchain. However, although the Blockchain helps in ensuring information transparency and openness, it makes it difficult for keeping the information confidential.

Demirkan, Demirkan and McKee (2020) pointed out that blockchain has emerged as a more powerful and reliable technologies for the cyber security. As a decentralised ledger technology, Blockchain has features of secure, transparent, immutable and permanent, which has the potential for enhancing the trust in the market participants (Yu, Lin and Tang, 2018). Wu, Xiong and Li (2019) noted that blockchain technology has influence on the accounting practises with the improvement in the audit quality and corporate governance, which indicates that the accounting information quality has been enhanced because of the Blockchain technology. The author pointed out that blockchain technology is able to protect the chain information security. Besides, Min (2019) noted that the cryptographic, open and decentralised nature of Blockchain technology helps in bringing unprecedented security benefits. For example, the hacking attacks previously which has been done on the centralised intermediaries like banks can be impossible as the Blockchain technology can help in keeping the track of all the transactions. Hence, Blockchain technology provides a secure way for creating a temper proof transactions and business activities.

*H1: Blockchain Security has a significant and positive influence on the transparency, efficiency and stakeholder's trust.*

Kanaparthy (2024) noted that the adoption of Blockchain technology promises to reduce the accounting expenses and the financial accounting tasks do not require additional staff's, which helps in minimising the costs. It is observed that the major benefit of the Blockchain technology is the capability in establishing a connection between the confidentiality of the technology, user information and the transaction along with the openness of the audit business processes. Hence, as there is no middleman involved in the transaction, the contracts have lower transaction costs. Blockchain Technology also helps in payment processing, where the advantages are more secure payments, faster and cheaper with the elimination of intermediaries and reduction in the transaction cost. Further, it is noted that leaders have superior qualities like accountability, security and transparency which is possible by the Blockchain technology. Thus, building transparent, safe and effective smart contract is possible by Blockchain technology. Javaid et al. (2022) opine that the smart contracts have the potential for improving the account trading parties' confidence by promoting transaction, transparency and lowering the risk of frauds and errors in the exchange of payments. Author pointed that the quicker procedures help in minimising the human errors, and that leads towards the development of trust with open transparency, where the blockchain transactions happen between two parties that are efficiently recorded.

*H2: Blockchain costs has a significant and positive influence on the transparency, efficiency and stakeholder's trust.*

Seshadrinathan and Chandra (2021) opine that the accounting function consists of critical tasks like classification, recording reporting, summarizing the monetary transactions and events along with interpretation of the outcomes. The author has identified the factors that influence the adoption of blockchain based accounting systems. For this purpose, the author has studied technology organisation environment framework. The study elucidated that there are 8 significant factors, which has influence on adoption of the blockchain technology that includes uncertainty, relative advantage, technology readiness, top management support, regulatory environment, trust, industry and competitive pressure. The big four audit firms like KPMG and Deloitte have heavily invested in the adoption of blockchain and research. It is argued that the technological advancements have made the job of the accountants to be easier and more efficient. Similarly, blockchain has the expectation for disrupting most of the current practices, controls and procedures in accounting.

However, on the contrary, Akter, Kummer and Yigitbasioglu (2024) opine that the lack of knowledge in understanding the benefits and usage of blockchain in accounting is present, which also increases the cost linked with the adoption intention. The author highlighted that the blockchain integration with the smart contracts can help in timely audit reporting and in a transparent manner, which can improve the quality of the audit. However, the challenges consist of lack of security and privacy, regulatory support, flexibility and scalability.

Jackson and Allen (2024) presented the Blockchain implementation and adoption in accounting. In the research survey data has been gathered from 585 accounting managers from different organisations, where the qualitative data has been thematically analysed and quantitative data has been presented as multivariate techniques and descriptive techniques. The results from the research highlighted the importance of staff perception of the ease of use of technology. The results reveal the importance of educating the accounting staffs related to technology through training. It is noted that perception of the staffs on the ease of use and usefulness of the technology adoption is considered through TAM. This respect attitude contributes to the intention of the individuals and the power people believe they have over their attitudes and behaviours. Thus, as the staffs considers that the new technology can help in enhancing the efficiency and productivity, then there more likely to adopt it.

*H3: Blockchain adoption and implementation has a significant and positive influence on the transparency, efficiency and stakeholder's trust.*

During an audit, the records are evaluated by external auditors for providing assurance related to integrity and accuracy and ensuring that there is proper compliance with the accounting regulations. Traditional financial audit was laborious, expensive time-consuming and requires obtaining paper documentation and manual reviews of the systems along with the confirmation from external sources. Here, blockchain reduces

the dependence upon manual tasks and helps in elimination of duplicate records (S., Demirkan, I., Demirkan & McKee, 2020). Chowdhury, Stasi and Pellegrino (2023) argue that the adoption of blockchain technology comes with challenges. For realising the benefits of the Blockchain, in accounting, it is important for the accounting professionals for developing understanding of the Blockchain and the implication. It is important that governance mechanism and regulatory frameworks are developed for providing compliance, guidance and protecting the interest of stakeholders. Further, Yu, Lin and Tang (2018) noted that the advent of Blockchain technology helps in delivering ideas for financial accounting and have impact on measurement, recognition, disclosure and presentation in financial accounting that can be helpful in reducing the errors in earnings management and disclosure which can improve the quality of the information. For example, the accounting firms can post the documents to the public Blockchain, which will automatically generate ledgers and the financial statement with the help of smart contracts. The assumptions and accounting standards that are utilised by the accounting firms can be shown in the smart contracts that will be recorded permanently. Thus, this way, the process changes the presentation, measurement and disclosure in the financial accounting. Hence, blockchain has some advantages in comparison to the traditional accounting system in respect of efficiency and transparency.

*H4: Blockchain compliance has a significant and positive influence on the transparency, efficiency and stakeholder's trust.*

Yu, Lin and Tang (2018) argue that blockchain technology application in the financial accounting has the potential for making the accounting firms processes transparent and enhances the external reporting quality along with reducing the information of asymmetry between outside investors and firms. However, Li and Wan (2021) presented a negative relationship between the corporate performance and blockchain application. On the other hand, the study highlighted that a survey has been conducted on companies and identified, that Blockchain can improve the consistency, adaptability and agility of supply chain, which helps in generating trust among the firms and enhance corporate performance.

*H5: Blockchain performance has a significant and positive influence on the transparency, efficiency and stakeholder's trust.*

Blockchain's simultaneous sharing of synchronised transaction records increases the accuracy and efficiency of accounting processes (Jackson & Allen, 2024). Gomez-Trujillo, Velez-Ocampo & Gonzalez-Perez (2021) noted that Blockchain is a distributed database, which promotes transparency and trust. Blockchain provides security and data storage, as it helps in information privacy with transparency that generates trust. Further, Han et al. (2023) noted that stakeholder theory highlights the ways through which Blockchain mitigate the information asymmetry and helps in improving stakeholder collaboration. Blockchain enabled accounting system, can help the accountants, managers, investors and business partners in actively collaborating for the verification of transactions and serve broader interests. Blockchain helps the information to be instantly shared, which enables verifiable, real-time, and transparent accounting system where the stakeholders like business partners, managers, accountants and investors collaborate for verifying transactions and give evidence for validation. Thus, blockchain shared ledger improves trust and transparency with the use of multi-party validated records.

*H6: Transparency has a significant and positive influence on stakeholder's trust*

Multi-party validation of blockchain helps in adding real-time trusted data for artificial intelligence systems that are used by accountants and auditors for improving efficiency and assurance. The technology helps in securing accounting data like accounts receivable and accounts payable, which increases the efficiency for transactions in accounting. For example, more accurate and faster reporting is facilitated by the automated compliance processes with smart contracts. According to the financial reporting Council, from Blockchain, trust is derived as records are immutable and temper-resistant. This technology helps in boosting information transparency, and efficiency, along with increasing stakeholder's trust.

*H7: efficiency has a significant and positive influence on stakeholder's trust*

### *Research Gap*

Despite ample of researches, the United Kingdom aspect is not properly studied in the context. Most of the studies are primarily focused on accounting and auditing industry. However, there missing research related to the Blockchain technology's Shift in Transparency and Efficiency in the United Kingdom. This study will be focusing on big four accounting firms in the United Kingdom. This way the contribution of this research will not only be highlighting the United Kingdom insights, rather also show the various context of blockchain in accounting.

## **Methodology**

### *Research Design*

This research follows a quantitative research method, where statistical conclusions are drawn to gain insights. This study utilises survey method for collecting data from accountants, auditors, CFOs, financial analysts and others. The survey is designed for evaluating the expectation, experiences, opinions and perception of the participants related to the use of Blockchain technology and the ways it enhances transparency and efficiency in accounting. Jackson and Allen (2024) followed similar research design of gathering online survey from accounting managers in Australia for understanding the technology adoption in accounting. Besides, experimental research is the research design type adopted in the study. Experimental research consists of establishing relationship between the cause and effect of the situation. It is considered to be a causal research design, where impact of independent variable is understood on dependent variable.

### *Data and Sample*

The responses from the participants have been gathered through email survey and the respondents have been provided with opportunity for keeping the participation voluntary with follow-up emails. In this study, questionnaires have been sent to the accounting professionals from the big four accounting firms in London, United Kingdom. This study has only sought responses from the accounting professionals who are working at London. For keeping the confidentiality, the number of participants from each firm is not mentioned. The raw data was gathered and total of 156 people participated from the accounting firms. The dataset consists of asking survey questionnaire from various people within the accounting firms for better diversity and representativeness. The sampling method adopted is stratified random sampling. This method is selected as the population is based on the role of the individuals within the accounting firms like auditors, accountants, CFOs, financial analysts and others. Besides, this approach also ensures proper representation of each big four firms in London, United Kingdom.

A questionnaire has been used in the study, where various independent and dependent variables are identified. A single variable had 2 questions; response of those questions is taken as average. Further, Likert scale is used for measuring survey participant's attitudes, opinions, perceptions, and motivations. Option 1 in question represents strongly disagree and option 5 represents strongly agree. Reliability analysis has been done in the study, which means examining the consistency and credibility of the measurement scale and the evaluation of the ability for producing relevant and consistent results, when the process of measurement is repeated multiple times. Reliability analysis is done with Statistical software SPSS. Reliability statistics reveals that Cronbach's Alpha value is 0.74, which makes it clear that all the questions of research are reliable. It means no question to eliminate.

### *Variables and Proxies*

Table 1. Variables and Proxies

Variables	Dependent/in dependent variable	Description	Survey Questions
Security	Independent	Security in accounting means protecting the transaction and financial data from unauthorised access, breaches, and fraud. This variable represents the ways blockchain provides data security in accounting processes.	Q7,8
Cost	Independent	Cost relates to expenditure of processing data, and conducting transactions. Cost variable represents the ways Blockchain decreases the transaction cost in accounting.	Q9,10
Adoption and implementation	Independent	Adoption and implementation mean integration of Blockchain technology in accounting processes. This variable shows whether integrating blockchain technology into existing systems was easy or difficult.	Q11,12
Compliance	Independent	Compliance refers to following the accounting principles and regulatory standards. This variable represents whether Blockchain improves organization's ability to comply with regulatory standards.	Q13,14
Performance	Independent	Performance is the efficiency of financial transactions, operations and reporting. This variable shows whether Blockchain impacts the financial performance of accounting firms.	Q15,16
Transparency	Dependent	This variable shows whether transparency of financial transactions increases since implementing blockchain technology.	Q4
Efficiency	Dependent	This variable represents whether Blockchain decreases manual processing or time taken for transactions.	Q5,6
Stakeholders Trust	Dependent	This variable means the trust of the stakeholders in the financial processes after the implementation of blockchain technology.	Q17,18

### *Models and Techniques*

On the basis of above variables, mediation models are developed.

three models are designed that are as follows:

#### *Model 1:*

$$TRANSPARENCY_{it} = \beta_0 + \beta_1 (SECURITY_{it}) + \beta_2 (COST_{it}) + \beta_3 (ADOPTIONANDIMPLEMENTATION_{it}) + \beta_4 (cOMPLIANCE_{it}) + \beta_5 (PERFORMANCE_{it}) + \varepsilon$$

#### *Model 2*

$$EFFICIENCY_{it} = \beta_0 + \beta_1 (SECURITY_{it}) + \beta_2 (COST_{it}) + \beta_3 (ADOPTIONANDIMPLEMENTATION_{it}) + \beta_4 (cOMPLIANCE_{it}) + \beta_5 (PERFORMANCE_{it}) + \varepsilon$$

Model: 3

$$\text{STAKEHOLDERTRUST}_{it} = \beta_0 + \beta_1 (\text{SECURITY}_{it}) + \beta_2 (\text{COST}_{it}) + \beta_3 (\text{ADOPTIONANDIMPLEMENTATION}_{it}) + \beta_4 (\text{cOMPLIANCE}_{it}) + \beta_5 (\text{PERFORMANCE}_{it}) + \beta_6 (\text{TRANSPARENCY}_{it}) + \beta_7 (\text{EFFICIENCY}_{it}) + \varepsilon$$

The three models are set of mediation models. In third model, transparency and efficiency are considered to be the independent variables which has influence on stakeholder's trust. These three models will be tested with OLS regression, that is the most suitable way for testing. SPSS software is used because of the benefit of elimination of multi collinear variables. Further, SPSS helps in validating the models with the use of statistical procedures.

## Analysis and Discussion

### Descriptive Statistics

In the survey, 46.79% of the participants were Accountants, and 26.92% were auditors (Figure 1). The descriptive statistics provide a summary of the central tendencies, dispersion, and range of the variables under study, which are crucial for understanding the baseline perceptions of blockchain technology among accounting professionals. The mean values for Transparency (3.74), Efficiency (3.8558), and Security (3.9712) suggest that respondents generally perceive an improvement in these areas due to blockchain implementation. The moderate standard deviations indicate relatively consistent responses across the sample. Similarly, high mean values for Compliance (4.1667), Performance (4.2308), and Stakeholder Trust (3.9519) imply positive perceptions regarding the impact of blockchain on these dimensions. The data shows a favourable overall attitude towards the benefits of blockchain in accounting, highlighting its potential in enhancing transparency, efficiency, security, compliance, performance, and stakeholder trust within the industry.

Figure 1. Job Title of Participants

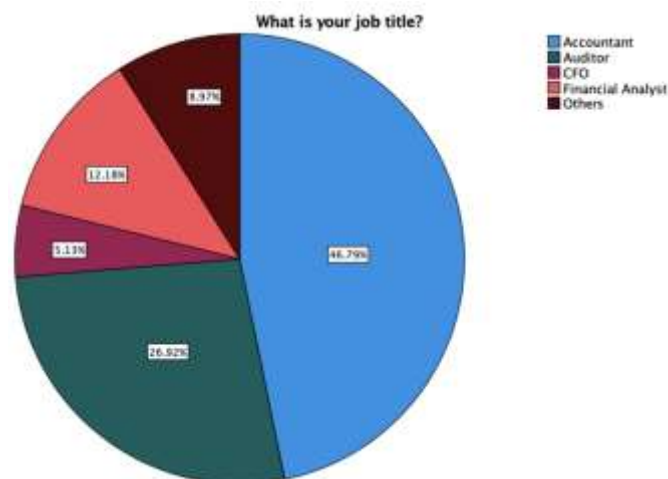


Table 2. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std Deviation
Transparency	156	1.00	5.00	3.74	.610
Efficiency	156	2.00	5.00	3.8558	.87623
Security	156	1.50	5.00	3.9712	.68684
Cost	156	2.00	5.00	3.1891	.76694



<i>Adoption_and_implementation</i>	156	2.00	5.00	3.7692	.77331
<i>Compliance</i>	156	2.00	5.00	4.1667	.65336
<i>Performance</i>	156	3.00	5.00	4.2308	.51552
<i>Stakeholders_Trust</i>	156	2.00	5.00	3.9519	.72017
<i>Valid N (listwise)</i>	156				

### Correlation Analysis

The correlation analysis reveals several significant relationships between the key variables that could influence the outcomes in the regression analysis. A strong positive correlation exists between Transparency and Efficiency ( $r = .793$ ,  $p < .01$ ), suggesting that improvements in efficiency are closely associated with increased transparency in financial transactions facilitated by blockchain technology. Similarly, Security shows a significant positive correlation with both Efficiency ( $r = .754$ ,  $p < .01$ ) and Transparency ( $r = .644$ ,  $p < .01$ ), indicating that enhanced security measures through blockchain are perceived to improve both efficiency and transparency. Cost demonstrates a significant negative correlation with Security ( $r = -.366$ ,  $p < .01$ ) and Efficiency ( $r = -.137$ ,  $p < .01$ ), suggesting that higher costs may be associated with lower perceived security and efficiency, potentially due to initial implementation expenses. Compliance is positively correlated with Efficiency ( $r = .606$ ,  $p < .01$ ) and Security ( $r = .708$ ,  $p < .01$ ), indicating that adherence to regulatory standards through blockchain contributes to higher efficiency and security levels. Performance is significantly correlated with Efficiency ( $r = .453$ ,  $p < .01$ ) and Security ( $r = .474$ ,  $p < .01$ ), highlighting the role of these factors in enhancing overall financial performance. Stakeholder Trust shows strong positive correlations with Efficiency ( $r = .602$ ,  $p < .01$ ), Compliance ( $r = .511$ ,  $p < .01$ ), and Performance ( $r = .834$ ,  $p < .01$ ), underscoring the importance of these elements in building trust among stakeholders. These significant correlations provide a foundation for the regression analysis, as they indicate key areas where blockchain technology impacts various dimensions of accounting practices.

Table 3. Correlation Analysis

	<i>Transparency</i>	<i>Efficiency</i>	<i>Security</i>	<i>Cost</i>	<i>Adoption_and_implementation</i>	<i>Compliance</i>	<i>Performance</i>	<i>Stakeholders_Trust</i>
<i>Transparency</i>	1	.793	.644	.042	-.126	.375	.251	.331
<i>Efficiency</i>	.793	1	.754	-.137	-.330	.606	.453	.602
<i>Security</i>	.644	.754	1	-.366	-.313	.708	.474	.450
<i>Cost</i>	.042	-.137	-.366	1	-.157	-.517	-.425	-.048
<i>Adoption_and_implementation</i>	-.126	-.330	-.313	-.157	1	.064	.122	-.104
<i>Compliance</i>	.375	.606	.708	-.517	.064	1	.589	.511
<i>Performance</i>	.251	.453	.474	.425	.122	.589	1	.834
<i>Stakeholders_Trust</i>	.331	.602	.450	-.048	-.104	.511	.834	1

### Regression Analysis

#### Model 1

The results revealed that Security, Cost and Adoption and Implementation are significant predictors of Transparency. The has a positive effect, implying that enhanced security improves the financial transactions' perceived transparency. Furthermore, the positive effect of cost denotes that the cost efficiencies realized through blockchain tend to contribute towards greater transparency. Adoption and Implementation variable, furthermore, indicated that the ease of integrating blockchain into accounting practices enhances the transparency. Performance and Compliance do not show significant impacts on Transparency. The

model explains 54.1% of the variance in Transparency ( $R^2 = 0.541$ ), indicating a moderate to strong fit. The adjusted  $R^2$  (0.525) further supports the robustness of the model.

### Model 2

The regression analysis for Efficiency reveals that Security, Cost, Compliance, and Performance are significant predictors. Security has a substantial positive impact on Efficiency, indicating that enhanced security measures through blockchain significantly improve operational efficiency. Cost positively influences Efficiency, suggesting cost efficiencies realized through blockchain contribute to greater efficiency. Compliance shows a positive and significant effect, indicating that adherence to regulatory standards enhances efficiency. Performance also positively impacts Efficiency, highlighting that better overall performance is associated with increased efficiency. Adoption and Implementation show a significant but negative impact, suggesting potential challenges during the implementation phase might initially reduce efficiency. The model explains 65.4% of the variance in Efficiency ( $R^2 = 0.654$ ), indicating a strong fit. The adjusted  $R^2$  (0.643) further supports the robustness of the model.

### Model 3

The regression analysis for Stakeholder Trust reveals that Cost, Performance, Efficiency, and Transparency are significant predictors. Cost positively impacts Stakeholder Trust, indicating that cost efficiencies realized through blockchain enhance stakeholder confidence. Performance shows a strong positive effect, suggesting that improved overall performance significantly boosts stakeholder trust. Efficiency also positively influences Stakeholder Trust, highlighting that operational efficiencies are valued by stakeholders. Interestingly, Transparency has a negative impact, indicating that other factors may be more influential in driving trust. Security, Adoption and Implementation, and Compliance do not show significant impacts on Stakeholder Trust. The model explains 89.8% of the variance in Stakeholder Trust ( $R^2 = 0.898$ ), indicating a very strong fit. The adjusted  $R^2$  (0.893) supports the robustness of the model.

**Table 4. Regression Analysis**

<i>Variables</i>	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>
<i>Security</i>	.921* (.082)	.510* (.103)	-.052 (.060)
<i>Cost</i>	.361* (.053)	.240* (.066)	.401* (.032)
<i>Adoption_and_implementation</i>	.226* (.052)	-.172* (.065)	-.049 (.036)
<i>Compliance</i>	-.107 (.088)	.281* (.110)	.082 (.055)
<i>Performance</i>	.002 (.084)	.169* (.104)	.846* (.049)
<i>Efficiency</i>			.456* (.053)
<i>Transparency</i>			-.263* (.066)

Note: (\*), (\*\*), (\*\*\*) indicates significance at 1%, 5%, and 10% level significantly.

## Discussion and Conclusion

The results from the above section shows that Blockchain security has a significant and positive influence on the transparency, and efficiency. This result is aligned with literature, where Demirkan, Demirkan and McKee (2020) noted that blockchain has emerged as a more powerful and reliable technologies for the cyber security. Further. as a decentralised ledger technology, Blockchain has features of secure, transparent,

immutable and permanent, which has the potential for enhancing the trust in the market participants (Yu, Lin and Tang, 2018). Hence, this study results are effectively aligned with the past studies. Besides, as per the correlation analysis, Security shows a significant positive correlation with both Efficiency ( $r = .754$ ,  $p < .01$ ) and Transparency ( $r = .644$ ,  $p < .01$ ), indicating that enhanced security measures through blockchain are perceived to improve both efficiency and transparency. In respect of cost, the correlation analysis shows that there is a significant negative correlation with Security ( $r = -.366$ ,  $p < .01$ ) and Efficiency ( $r = -.137$ ,  $p < .01$ ), suggesting that higher costs may be linked with lower perceived security and efficiency, potentially due to initial implementation expenses. Further, as per regression analysis it is argued that the positive effect of cost denotes that the cost efficiencies realized through blockchain tend to contribute towards greater transparency. The literature shows that according to Kanaparthi (2024) adoption of Blockchain technology promises to reduce the accounting expenses and the financial accounting tasks do not require additional staff's, which helps in minimising the costs. On the other hand, Javaid et al. (2022) opine that the smart contracts have the potential for improving the account trading parties' confidence by promoting transaction, transparency and lowering the risk of frauds and errors in the exchange of payments. Thus, cost reduction through blockchain implementation is effectively indicating greater transparency.

The regression analysis is revealing that Adoption and implementation are significant predictors of Transparency. However, in literature adoption and implementation of blockchain has been linked with better efficiency. For example, Jackson and Allen (2024) presented the Blockchain implementation and adoption in accounting. In the research survey data has been gathered from 585 accounting managers from different organisations. The outcome reveals the importance of educating the accounting staffs related to technology through training. Overall, as the staffs considers that the new technology can help in enhancing the efficiency and productivity, then they are more likely to adopt it. However, the results from Model 2 related to efficiency is opposite than the past studies. The regression analysis shows that Adoption and Implementation have a significant but negative impact, suggesting potential challenges during the implementation phase might initially reduce efficiency.

As per regression analysis, Performance and Compliance do not show significant impacts on Transparency. The literature has mixed views like Yu, Lin and Tang (2018) argue that blockchain technology application in the financial accounting has the potential for making the accounting firms processes transparent and enhances the external reporting quality along with reducing the information of asymmetry between outside investors and firms. However, Li and Wan (2021) presented a negative relationship between the corporate performance and blockchain application. Similarly, this study also shows that performance do not show significant impacts on Transparency. On the other hand, compliance shows a positive and significant effect, indicating that adherence to regulatory standards enhances efficiency. Performance also positively impacts Efficiency, highlighting that better overall performance is associated with increased efficiency.

Overall, this study is indicating that blockchain technology has a positive and significant influence on the transparency, efficiency and stakeholder's trust. However, this study has various limitations. Firstly, the focus on chosen participants from big four firms only in London, United Kingdom may impact the generalisability. Second, this study has used survey method, where there might be discrepancies in the findings of the survey because of several factors like response bias, sampling bias, or measurement error in data gathering. Another limitation is the constraints which consist of the time, budget and resources constraints. For example, limited availability of the expertise and human resource, impact the process of the survey and the data analysis. Further, although the results of the study are relevant currently, the long-term effect may not be captured.

This study reveals that Blockchain implementation has a positive impact on the accounting firms in UK. The first policy recommendation is promoting the adoption of Blockchain among the accounting firms. For instance, tax incentives can be provided to the accounting organisations that are heavily investing in the Blockchain technology. Besides, regulatory frameworks can help in guiding the adoption of Blockchain technology among the accounting firms. Another policy recommendation is creating a comprehensive guideline for efficient and secure Blockchain technology use. It is recommended to have a development program within the accounting firms, where training can be provided to the accountants, financial analysts and auditors related to the Blockchain use.

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