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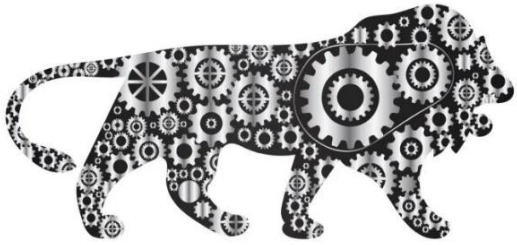

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## CSIBER International Journal - CIJ

# CONTENT

# The Future Accountant: Crucial Competencies for Blockchain Accounting and Its Effect on Auditors

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**ABSTRACT** — It is essential for accountants to improve their current abilities and get market- and technology-ready in this age of rapidly evolving technologies. The field of accounting and auditing is also utilizing the relatively new technology known as blockchain. This article aims to investigate professional and scholarly opinions about the abilities required to operate in a blockchain technology environment and potential changes to the role of auditors. The respondents concurred that they need to improve their knowledge of, legal requirements, smart contracts, consensus mechanisms, etc. They also concurred that the use of blockchain technology would transform the role of auditors from traditional accounting and auditing to auditing of smart contracts, consensus protocol dependability, and assessment of digital assets and liabilities.

**KEYWORDS—** Blockchain Technology, Accountants, Skills, Auditor

## INTRODUCTION

Blockchain accounting is a revolutionary approach to record-keeping and financial management that leverages blockchain technology. Unlike traditional accounting methods that rely on centralized databases and intermediaries, blockchain accounting operates on decentralized networks, offering transparency, security, and immutability. At its core, blockchain accounting utilizes a distributed ledger system where transactions are recorded in a chronological and transparent manner across a network of computers, known as nodes. These transactions are grouped into blocks and linked together in a chain using cryptographic techniques, hence the term blockchain. The term "blockchain accounting" describes the application of blockchain technology to accounting. Blockchain is a distributed, decentralized digital ledger that makes it possible to create a safe, transparent, and impenetrable record of transactions. Accounting data can be safely kept in a distributed ledger utilising blockchain technology, where every transaction is recorded and validated by several network nodes. Blockchain accounting creates an irreversible and permanent record of all accounting processes by recording transactions as blocks that are added to the blockchain chronologically. The technology makes the accounting process more accurate, transparent, and secure because it makes the data on the blockchain accessible to all parties for verification. All things considered, blockchain accounting has the power to completely transform the accounting sector.

## REVIEW OF LITERATURE

While reviewing prior literature, it was found that not much work has been done using primary data.

**Hashem, Mubarak and Abu-Musa (2023)** conducted an empirical study on a sample of Egyptian banks that use blockchain technology during the period from 2017 to 2021 and found that there is a significant relationship between blockchain and audit quality in the banking sector.

**Chowdhury (2021)** conceptualized the impact of blockchain technology on financial accounting from technical and non-technical perspectives.

**Zheng (2021)** studied the necessity and feasibility of the application of blockchain technology in the accounting industry.

**Tiron-Tudor et. al (2021)** indicated that implementing BT requires some new modus operandi.

**While Pimentel and Boulianne (2020)** made a systematic literature review and found that academics have begun to explore how the accounting profession might change in response to blockchain, this research study is limited primarily to the auditing field.

## RESEARCH METHODOLOGY

### OBJECTIVES

The study has two objectives:

1. To investigate what abilities aspiring accountants will require in order to operate with blockchain-based accounting.

2To explore how the use of blockchain technology could alter the roles of auditors.

### HYPOTHESES

1. There is no significant difference among the opinion of respondents for various future skills needed for accountants.

2. Demographic factors have no effect on the opinion of respondents for various future skills needed for accountants.

## DATA COLLECTION

Data for this study consists of primary data. A structured questionnaire was prepared in order to obtain the opinion of academicians and accounting professionals regarding skills needed for blockchain accounting. Apart from basic demographic questions like age, gender, education, experience, country etc., the questionnaire contained some latest skills required to work in the world of changing technology. Respondents were offered with six distinctive skills required by future accountants, to which they had to respond on a five-point Likert Scale ranging from "Strongly Agree" to "Strongly Disagree". They were also asked about changes this technology will bring in the field of auditing.

## SAMPLING

Purposive and judgmental sampling method was used to select respondents for the study. Respondents were chosen either from academics i.e. those who are teaching accounting subjects or from accounting professionals i.e. those who are working in the field of accounting. In all 160 responses could be obtained after discarding incomplete responses.

## RESULTS AND DISCUSSION

**TABLE 1**
**DEMOGRAPHIC PROFILE OF RESPONDENTS**

| Age Group | Frequency | Percent | Gender | Frequency | Percent |
|---|---|---|---|---|---|
| < 20 | 5 | 3.125 | Male | 124 | 77.5 |
| 20-40 | 109 | 68.125 | Female | 36 | 22.5 |
| ≥40 | 46 | 28.7 | TOTAL | 160 | 100 |
| TOTAL | 160 | 100 | **Education** | **Frequency** | **Percent** |
| **Work Experience** | **Frequency** | **Percent** | Accounting | 113 | 66.9 |
| 0-5 years | 65 | 40.6 | Research | 18 | 10.7 |
| 5-10 years | 26 | 16.3 | Computer Science | 13 | 7.7 |
| ≥ 10 | 69 | 43.1 | FinTech | 10 | 5.9 |
| TOTAL | 160 | 100 | Others | 6 | 3.6 |
| | | | TOTAL | 160 | 100 |

**Source: Compiled by Researcher**

Since the study focused on skills needed to work with blockchain technology, the sample was judgmental which is reflected in the demographic characteristics of the respondents. Majority of respondents are male (77.5 per cent), between the age of 20 and 40 years (68 per cent). The respondents having less than 5 years of experience were 40.6 percent; those with 5-10 years were 16.3 percent and those having more than 10 years were 43.1 percent. The respondents had different educational qualifications. Due to diverse degrees they had, they were clubbed into five groups based on similarity of education – accounting, research, computer science, fintech and others. Majority of the responses were received from those who have obtained degrees in accounting field (66.9 per cent), like post-graduation, CA, CS, MBA, ICWA, M. Com. etc. The respondents from research field were 10.7 percent and from computer science field were 7.7 percent. The respondents who had a combination of accounting and computer science have been categorized as fintech and they were 5.9 per cent only.

**TABLE 2**

| Required Skills | Mean | Std. Dev. | C. V. | S-W | df | Sig. |
|---|---|---|---|---|---|---|
| Understanding of principles and functions of blockchain technology | 1.68 | 0.749 | 44.69% | 0.772 | 159 | 0.00 |
| Keeping oneself updated with emerging technologies | 1.66 | 0.768 | 46.19% | 0.763 | 159 | 0.00 |
| Understanding of triple entry accounting system | 1.80 | 0.815 | 45.28% | 0.806 | 159 | 0.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Knowledge about Government regulations regarding blockchain technology | 1.71 | 0.790 | 46.29% | 0.779 | 159 | 0.00 |
| Understanding of smart contract | 1.84 | 0.868 | 47.23% | 0.810 | 159 | 0.00 |
| Understanding consensus protocol | 1.84 | 0.892 | 48.58% | 0.797 | 159 | 0.00 |

**DESCRIPTIVE STATISTICS AND NORMALITY RESULTS**

| Changes in Auditors' Function | Mean | Std. Dev. | C. V. | S-W | df | Sig. |
|---|---|---|---|---|---|---|
| Auditing smart contracts | 1.91 | 0.930 | 48.80% | 0.813 | 159 | 0.00 |
| How transactions are recorded and recognized in financial statements | 1.81 | 0.799 | 44.28% | 0.806 | 159 | 0.00 |
| Perform arbitration function to settle disputes | 2.36 | 0.981 | 41.52% | 0.887 | 159 | 0.00 |
| Examining how judgmental elements have beendecided, such as valuation | 1.98 | 0.760 | 38.49% | 0.825 | 159 | 0.00 |
| Examining reliability of consensus protocol for the specific blockchain | 1.97 | 0.850 | 43.17% | 0.821 | 159 | 0.00 |
| Evaluation of management's accounting policies for digital assets and liabilities | 1.76 | 0.807 | 45.94% | 0.791 | 159 | 0.00 |

**Source: Compiled by Researcher**

For the purpose of the type of tests to be used for hypotheses testing, normality test has been performed using Shapiro-Wilk test. Results show that p values of for all the skills offered along with all statements related to changes in auditors' functions are less than 0.05. This shows that the data is not normally distributed and hence non-parametric tests are to be used.

Table 3 presents the results of Chi-square test for overall opinion. For skills required, it is found that Chi-Square test statistic was significant for all the skills as the p value is less than 0.05. Hence it can be concluded that there is significant difference in the overall opinion of respondents for skills required to work in blockchain technology environment. Majority of respondents are in agreement for all the skills required.

**TABLE 3**
**CHI-SQUARE TEST RESULTS FOR OVERALL OPINION**

| Required Skills | Chi-Square | P Value |
|---|---|---|
| Understanding of the principles and functions of blockchain technology | 91.950 | .000 |
| Keeping oneself updated withemerging technologies | 93.650 | .000 |
| Understanding of triple entryaccounting system | 67.700 | .000 |
| Knowledge about Government regulations regarding blockchaintechnology | 82.850 | .000 |
| Understanding of smart contract | 120.750 | .000 |
| Understanding consensusprotocol | 123.862 | .000 |

| Changes in Auditors'Functions | Chi-Square | P Value |
|---|---|---|
| Auditing smart contracts | 112.313 | .000 |
| How transactions are recordedand recognized in financial statements | 132.478 | .000 |
| Perform arbitration function tosettle disputes | 70.625 | .000 |

| | | |
|---|---|---|
| Examining how judgmental elements have been decided, suchas valuation | 140.063 | .000 |
| Examining reliability of consensus protocol for the specific blockchain | 127.813 | .000 |
| Evaluation of management's accounting policies for digitalassets and liabilities | 140.875 | .000 |

**Source: Compiled by Researcher**

Similarly, for changes that would be brought by blockchain technology in auditors' functions, it was found that Chi-Square statistic was significant for all the changes offered to the respondents. P values for all the changes are less than 0.00 and thus null hypothesis is rejected for all the changes at 5 per cent level of significance. It can be concluded that respondents' opinion differs significantly for all the changes that would occur in blockchain technology environment. Thus, it can be concluded that majority of the respondents agree with all the skill sets offered to respondents and demographic variables are not significantly impacting the opinion of respondents. Accountants need to understand the basics of blockchain technology, smart contracts, consensus mechanism and triple entry accounting. Then effect of demographic factors was tested using non-parametric tests. There were four demographic factors, effect of which could be tested – gender, age, education and experience.

## CONCLUSION

In this study an opinion survey was conducted among accounting academicians and professionals to find the future skills required and potential changes in auditors' function in a blockchain based accounting environment. It was found that understanding of blockchain technology, smart contracts, consensus mechanism, related legislations were considered necessary by respondents. The advent of blockchain technology presents both opportunities and challenges for accountants and auditors. By cultivating the necessary competencies and embracing the transformative potential of blockchain, accounting professionals can adapt to the evolving landscape, foster transparency, and elevate the value they deliver to clients and stakeholders in the digital age.

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