
Digital Currencies Financial Reporting and Auditing: A New Concern for Accounting Professionals in the Accounting Industry

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Abstract

Accounting is a traditional profession of trust, and the financial reporting standards, auditing standards, rules, and regulations guiding accounting professionals' functions in the financial market have been established and have existed for years. Hence, the popularity and increases in businesses holding digital currencies (assets) in their financial statements create concerns for accounting professionals in the accounting industry worldwide. This qualitative study explores digital currencies financial reporting and auditing concerns for accounting professionals in the accounting industry. The study provides insights into the interplay between the accounting profession, standard-setting bodies, digital currencies, and blockchain, offering concerns for financial reporting and audit professionals in the accounting industry. Based on the results of the conducted study, accounting professionals currently face the following concerns and challenges when reporting and auditing organizations holding cryptocurrencies, stablecoins, nonfungible tokens (NFTs), and central bank digital currencies (CBDC) in their financial statements, namely the absence of comprehensive and universal financial reporting standards, nonauthoritative auditing standards, the nonexistence of digital currency regulations, heightened digital currencies related crimes, high litigation risks, blockchain technology financial reporting, and auditing. Digital currencies present novelty challenges to accounting professionals that require modifying existing accounting and auditing standards or issuing new ones. Therefore, the study concludes that it is imperative for the International Accounting Standards Board (IASB), Financial Accounting Standards Board (FASB), International Auditing and Assurance Standards Board (IAASB), the American Institute of Certified Public Accountants (AICPA), Security Exchange Commission (SEC) and other global regulators to urgently develop and release comprehensive and uniform global accounting standards, auditing standards and digital currencies regulations to avoid discretionary judgment currently relied upon by accounting professionals in the accounting industry for digital currencies financial reporting and auditing.

Keywords: Digital currencies, Digital assets, Cryptocurrencies, Central bank digital currency(CBDC), Non-Fungible Token (NFT), Stablecoins, Financial reporting, Auditing, Accounting professionals, Accounting standards, Auditing standards.

1. Introduction

The fourth Industrial Revolution, courtesy of 21st-century digital innovation, has seen the emergence and boom of digital currency in the global financial systems (Bas et al., 2024). The market for digital currency is growing precipitously, with digital assets and payment systems such as cryptocurrencies, stablecoins, nonfungible tokens (NFTs), central bank digital currency (CBDC), mobile payments, blockchain technology, and digital trading platforms evolving continually (Bas et al., 2024; Dupuis et al., 2023). As the popularity of these digital assets increases, whether as a medium of exchange, investment assets, speculative financial instruments, or inventory, it becomes common for business organizations to show in their financial statements significant digital asset balances to reflect the outcome of their digital assets transactions (Vicent et al., 2022; Dupuis et al., 2023). Amid this paradigm shift in the global financial market, the financial reporting and auditing of these digital assets in business organization financial statements bring to dialogue the function of accounting professionals because current investors, prospective investors, and the general public depend to a large extent on accounting professionals to provide accurate accounting and auditing services in their independent evaluations and examination of their financial statements(Smith et al., 2019).

According to Pravdiuk et al.(2024), the emergence of digital assets and blockchain digital ledgers indicates not only a technological revolution but also prompts a reevaluation of accounting professionals' fundamental principles of financial reporting, auditing, and financial management roles. Hence, the rapid boom of the digital currency market comes with both concerns and challenges for accounting professionals in the accounting industry. For instance, in 2019, the Canadian Public Accountability Board (CPAB) discovered deficiencies in seven(7) out of eight (8) audit files reviewing embroiling audit clients with digital assets exposure (Dupuis et al., 2023). These deficiencies include failure by the external auditors to obtain sufficient and appropriate audit evidence related to digital assets as stated in the audit client financial statements, inadequate understanding of the audit approaches, and failure to evaluate the reliability of information about the digital asset provided by management (Dupuis et al., 2023).

Accounting professionals are tasked with ensuring that financial statements are prepared in accordance with applicable International Financial Reporting Standards(IFRS), General Acceptable Accounting Principles (GAAP), free of material misstatements due to either fraud or errors and evaluating the effectiveness of internal controls during client engagement as an external auditor, consultants or employee as stipulated by either the General Acceptable Auditing Standards(GAAS) or the International Standards Auditing (ISA) (Dupuis et al., 2023; Ibrahim, 2023). Therefore, with the continual evolution of the digital currency ecosystems and the absence of auditing and accounting standards from financial reporting and auditing standard-setting bodies, accounting professionals are faced with an ever-changing landscape of liability from both clients with significant digital assets in their financial statements and the accounting industry regulators (Dupuis et al., 2023; Ibrahim, 2023).

1.2 Significant of the study

Digital currency transactions are changing the nation's financial markets and global economic scenes. Thus, as the market for digital assets continues to grow and develop, standard setting bodies, researchers, policymakers, and regulators must closely observe these patterns and trends and their implications for accounting professionals in the accounting industry.

1.3 Previous research

Academic studies are rare on the financial reporting and auditing issues surrounding the digital currencies ecosystem and the concerns for accounting professionals in the accounting industry. Prior studies have documented the diversity of practices among accounting professionals applying IFRS, GAAP accounting standards and ISA, PCAOB and AICPA auditing standards on digital currency and digital assets-related transactions (Luu et al., 2023; Smith et al., 2019; Ozeran et al., 2020; Alsalmi et al., 2023; Ibrahim et al, 2023; Penkin, 2019; Dupuis et al., 2023; Pravdiuk et al., 2024). Despite this research, Vincent et al.(2023), in their scholarly article on Accounting Research Opportunities for Cryptocurrencies, illustrate that there still exists a scarcity of digital currencies concerns for accounting professionals doing financial reporting and auditing, especially with the emergence, exploration, piloting, and adoption of Central Bank Digital Currency (CBDC).

1.4 Research questions

Therefore, this paper intends to address one of the identified gaps by answering the question: *What concerns do accounting professionals in industry have regarding the digital currency financial reporting and auditing?*

1.5. Research Structure

The main contribution of this research paper is threefold. First, the author analyses the accounting classifications and treatment of digital currency transactions in the financial statements; the author then examines the aspect of auditing digital assets through the blockchain technology in companies' financial statements coupled with the significant risk involved, and finally, the author seeks to contribute to the knowledge and practice by providing details overview through literature review, the concerns and implication faced by accounting professional when reporting and auditing digital currencies.

After the introduction above, the remaining aspect of this study is structured as follows: Section 2 describes current quantitative indicators and trends in the digital currency ecosystem and the accounting profession. Section 3 will be followed by a literature review of concepts and theories, including digital currency, digital assets, blockchain technology, financial reporting, and auditing. Section 4, after the literature review, the author frames the study's methodology and then analyzes the literature on digital currency financial reporting concerns for accounting professionals and digital currency auditing concerns for accounting professionals. Section 5 of the paper will highlight the results of the study that is the current and potential concerns,

challenges, and implications for accounting professionals related to digital currencies financial reporting and auditing while section 6 will discuss the study results. Finally, the conclusion and recommendation are reached in section 7.

2. Key Quantitative Indicators and Trends- Digital Currency and Accounting Profession.

According to a Good Firm survey, in 2023, approximately 64% of businesses used digital currencies for vendor payments, and 89.6% used Cryptocurrency for cross-border payments (Sebastian, 2024). Corporate giants such as Amazon, AT&T, Coca-Cola, Microsoft, Starbucks, and Hublot accept digital currency payments in response to growing consumer demand. In its first fiscal quarter, Visa processed more than \$2.5 billion of payments with crypto-linked cards (Hodge,2022). Digital currencies are rapidly being seen as an effective way to do business globally (Hodge,2022), with developing and emerging economies such as the US, European Union, United Kingdom, Nigeria, China, and India being actively involved.

2.1. Cryptocurrency

Public listed companies, privately owned firms, private individuals, and governments globally invest heavily in cryptocurrencies yearly. As of December 26, 2024, publicly listed companies held a total of US\$ 54.89 billion in Cryptocurrency in their balance sheet; private companies had a total of US\$ 34.53 billion, country governments had US\$ 49.86 billion, and exchange-traded funds (ETF) held US\$ 122.68 billion Cryptocurrency in their balance sheet (Bitcontreasuries, 2024;). crypto assets held by public corporations, including ETFs, increased significantly between the last quarter of 2023 and quarter three of 2024 (Gannatti, 2024). With Galaxy Holdings, MicroStrategy, Tesla, Marathon Digital Holding Inc, Coinbase, Bitcoin Group SE, Clean Spark Inc, Hut 8 Corp, Riot Platforms Inc, and Block Inc combined, they had a total value of US\$ 21.2 billion Cryptocurrency on their balance sheet in as at 30, September 2024 (Bitcontreasuries, 2024; Coingecko, 2024).

On January 10, 2024, the Security Exchange Commission(SEC) approved the spot Bitcoin Exchange Trade Fund(ETF), marking a significant milestone in the United States and global investment landscape (Gannatti, 2024; Gensler, 2024; Chainalysis, 2024). According to Chain analysis(2024), the SEC Bitcoin ETF approval and launch had an immediate impact on the cryptocurrency ecosystem, with billions of dollars in inflows since January 10, 2024, and the price of bitcoin began an upward trend soon after the US Bitcoin ETF was approved. Daily ETF volumes have surged, approaching nearly \$10 billion in March and consistently trading in the billions (Chainalysis, 2024; Gannatti, 2024). Moreover, cryptocurrency users worldwide became more active in 2024, surpassing the cryptocurrency ecosystem's highest peak in 2021(Partz, 2024; Chainalysis, 2024). The market capitalization of Cryptocurrency as of September 2024 is US\$ 2.4 Trillion, an all-time high compared to the market cap in 2022 and 2023 of US\$ 894 billion and US\$ 1.66 trillion, respectively (Statista, 2024). Matos (2024) states that the global cryptocurrency trading volume has surged considerably, with an upward trend of 90% compared to the 2022 trading volume. Europe and Asia emerged as the leaders in this burgeoning market, accounting for 37.32% and 36.17% of the global cryptocurrency transaction value (Matos, 2024).

According to blockchain data platform Chainalysis Inc., cryptocurrency-based crime hit a record high of US\$ 242 billion as of December 31, 2023, increasing digital currency financial reporting and audit risk (Chain, 2024). Langton(2024) states the value of stolen funds from cryptocurrency platforms in 2024 is projected to be US\$ 2.2 billion, a 21% increase when compared to that of 2023 fiscal year. By July, 2024, the amount of cryptocurrency stolen fund was US\$ 1.6 billion which is 72% of the budgeted amount (Langton,2024). Furthermore, in August 2024, the Federal Bureau of Investigation (FBI) indicated and arrested two persons with conspiracy to steal and launder US\$ 230 million in Cryptocurrency (US Justice Department, 2024). Finally, according to the US Justice departments October 2024 Press releases, three cryptocurrency company and 18 employees have been charged for widespread fraud and manipulation in the cryptocurrency market involving US\$ 25 million worth of cryptocurrency.

2.2. Stablecoins

The unprecedented growth of Cryptocurrency has led to the subsequent widespread use of stablecoin since it launched in 2014 (Moore, 2024). As of May 2024, there are over 27.5 million active stablecoin users worldwide, with the volume of stablecoin transactions increasing yearly by 50% (Heaton, 2024; CoinGecko, 2024). As indicated in Heaton's (2024) crypto payroll 2024 statistics report, the market capitalization of fiat-backed stablecoins as of July 2024 has reached approximately US\$ 165.93 billion, though below the 2021 market cap of US\$ 181.7 billion. The market cap for commodity back stable coins as of July 2024 was US\$ 1.3 trillion, an 18.1% increase when compared to the 2023 market cap(Moore, 2024; Coin Gecko, 2024). In 2024, the adoption of stablecoin by businesses worldwide for payment of transactions reached approximately 25% (Heaton, 2024).

2.3. Non fungible Token (NFT)

Nonfungible tokens (NFT) provide safe, secure, and less likely fraud issues when compared to Cryptocurrency and stable coins(Grandview,2024). NFTs provide risk-averse investors with a medium for investment in digital assets other than coins or Cryptocurrency (Grandview,2024). According to the Forbes digital assets platform, NFT's global market capitalization as of December 27, 2024, was US\$ 81.99 billion, a 205% increase from December 31, 2023, market capitalization of US\$ 26.9 billion (Forbes, 2024; Grandview,2024). Projected revenue in the NFT market in 2024 was US\$ 683.9 million and total users in the NFT market to reach 11.64 million users by 2025(Statista, 2024).

2.4. Central Bank Digital Currency (CBDC).

According to the Atlantic Council CBDC tracker report of September 30, 2024, 134 countries' central banks are actively involved in implementing, developing, and researching CBDC (Kumar et al., 2024). As of September 30, 2024, three countries -Nigeria, the Bahamas, and Jamaica— have launched CBDC as legal tender, and 13 G20 countries and 31 other countries are already in the pilot phase of their respective CBDC projects (Kumar et al., 2024).

2.5. Financial Reporting and Auditing

On December 13, 2023, the Financial Accounting Standard Board(FASB) issued ASU-2023-8 final accounting standards on crypto assets, which addresses the accounting and disclosure requirement for crypto assets. The International Financial Reporting Standards Board (IFRSB) has only provided guidance under IAS 38 and IAS 2 for accounting for only cryptocurrency-related digital currency (Siegel, 2023; McKinney et al., 2023). As of the time of this research, the Public Company Accounting Oversight Board (PCAOB) and International Standards on Auditing Board (IASB) have only issued guidance on auditing crypto assets. However, no auditing standards have been issued to date on digital currencies (PCAOB, 2023).

In August 2024, PCAOB released the 2023 annual inspection report for accounting firms in the accounting profession, which includes the six global networks of accounting firms, namely, PWC, KPMG, Ernest and Young, Deloitte, BDO, and Grant Thornton auditing public companies with digital assets holdings (Goelzer, 2024). According to the PCAOB report, 34 percent of these firms' audit engagements examined did not appropriately assess the risk of material misstatements related to rights and obligations of crypto asset holding in the client financial statements nor obtain sufficient and appropriate evidence to support right and obligation financial statements assertion (Goelzer, 2024; PCAOB, 2023). Moreover, overall deficiencies identified increased by 4% compared to the 2022 PCAOB inspection report (Goelzer, 2024; PCAOB, 2023).). Moreover, on March 28, 2024, the Public Company Accounting Oversight Board (PCAOB) fined PricewaterhouseCoopers LLP in the US \$2.75 million for quality control violations (Ho, 2024). Also, KPMG and Ernest Young settled lawsuits to tune US\$ 1.4 billion in 2023 for audit negligence and misrepresentations (Kiladze, 2023).

3. Literature Review

3.1 Conceptual Review

The main concepts in this study are briefly examined in this section as shown below:

3.2. Digital Currencies

In 1983, David Chaum introduced the concept of a private key-controlled digital equivalent of cash, which began the history of digital currency (Chaum, 1982; Pinyonattagarn, 2017). David Chaum started Digi Cash, an electronic in Holland, to commercialize his research idea, but the company filed for bankruptcy in 1998 (Pinyonattagarn, 2017). Following Chaum's discovery, several unsuccessful digital currency equivalents emerged, including the 1990s dot-com bubble, e-gold (1996), QQ coins (2005) and liberty services (2006) until the emergence of Nakamoto cryptocurrency digital currency in 2008, stablecoin in 2014, NFTs in 2014, CBDCs in 2020 (Pinyonattagarn,2017; Antal-Molnar, 2022; Nakamoto, 2009; Schaar et al., 2021).

Researchers have been looking for the most appropriate definition for describing the concept of Digital currency as accurately as possible. Qu et al.(2022), in their study of the digitalization of money to Cryptocurrency, define digital currency as any form of money or money equivalent in

digital form. On the other hand, Narayanan (2020) states that digital currency is a form of virtual currency that is available in electronic form. Ali (2014) suggested that from the economic theory approach, digital currency depends on how much it acts as a medium of exchange, store of value, and unit of account. Finally, Pinyonattagarn (2017), in their study of emerging trends in the financial systems, defines digital currency as money recorded electronically on a stored card. According to Bolt et al. (2021), there are four types of digital currency: Cryptocurrency, stablecoins, Nonfungible tokens (NFTs), and central bank digital currency.

3.2.1. Cryptocurrency

The succession of financial crises throughout the 20th century, including the 2008 global financial crisis, caused a collapse in the financial system (Peneder, 2022; Wilson, 2019). Therefore, public trust in the banking system and central banks' supervisory and regulatory functions worldwide was severely undermined. These events smoothed the path for Satoshi Nakamoto pseudonym peer-to-peer cryptocurrency discovery in 2008, which was subsequently launched on January 3, 2009, and the first real-time transaction on the blockchain platform took place on May 22, 2010 (Rejeb et al., 2021; Nakamoto, 2009; Abed et al., 2023).

Numerous scholars have different definitions of Cryptocurrency. Chucherd et al. (2019) define Cryptocurrency as a type of digital currency with unique cryptography that requires an access code compatible with blockchain technology, a distributed ledger technology that facilitates transaction exchange, and does not require any financial intermediaries. Next, Cryptocurrency is defined by Narayanan (2021) as a member of virtual currency that is exchanged through consumer sentiment and price movement. Narayanan (2021) argues that Cryptocurrency is a digital currency and not all digital currencies are Cryptocurrency, which is true in the case of stablecoins, nonfungible tokens (NFTs), and central bank digital currency (CBDC). Finally, Mert et al. (2023) explain that Cryptocurrency, though a digital form of fiat currency, has the three core attributes of fiat money: medium of exchange, store of value, and units of account. According to the Chainalysis (2023) cryptocurrency global report, 155 countries have adopted Cryptocurrency as a medium of exchange for payments of goods and services, with the US, European Union Zone, Brazil, Nigeria, and India leading the pack.

3.2.2. Stablecoins

In 2014, the stablecoin was launched to act as a safer store of value in the crypto ecosystem backed by fiat currencies—dollars, pounds, and euros. A stablecoin is described by Narayanan (2021) as virtual currency that is not Cryptocurrency but digital currency backed by official fiat currency or financial assets that are regulated by a complex algorithm. As explained in Vitalii et al.(2023), stablecoins are hybrid crypto assets that combine innovative emission technologies with a centralized emission mechanism and various forms of maintaining a stable exchange rate. Ante et al.(2023) define stable coins as digital currencies that peg their values to other assets, fiat currencies such as US dollars, and physical assets such as gold. Stablecoins are technologically dependent because they are often issued based on existing blockchains (Vasyukov et al.,2023). Thus, stablecoins can be either e-money or cryptocurrency investment

assets depending on the underlying characteristics of their intended use upon issuance on the blockchain technology (Vasyukov et al.,2023; Lennart et al.,2023). Therefore, unlike Cryptocurrency, stablecoins are directly related to the requirement to identify issuers or the assets underlying the issuance of the stablecoin (Vasyukov et al.,2023; Lennart et al.,2023).

3.2.3. Nonfungible Tokens (NFTs)

In 2012, the concept of Nonfungible Tokens (NFTs) was discovered along with the Bitcoin-based colored coins (Manoylov, 2023). However, in 2014, Kelvin McCoy created Quantum, the first Nonfungible Tokens (NFTs) that marks the innovative reengineering of the traditional views of art ownership, value, and artistic expression (Manoylov, 2023; Katz, 2024). Thereafter, innovation within the NFTs eco-space surged to its full potential in 2021 with the launch of the Ethereum blockchain, which provides a more reliable and accessible platform for NFT projects (Manoylov, 2023; Katz, 2024). Though NFTs are fully mainstream when writing this research, their definition is contextual and varies in academic literature. In that light, Kaisto et al.(2024) define nonfungible tokens (NFTs) as unique, digital identifiers cryptographically recorded on a blockchain that is used to certify ownership and authenticity. On the other hand, Ali et al.(2023) describe Nonfungible Tokens (NFTs) as blockchain-based digital assets representing ownership of unique digital or physical items. According to Schaar et al.(2022) and Ali et al.(2023), NFTs can be text, image, sound file, or video, which may be physical or digital, such as games, collectibles, DeFi, utility, virtual real estate, music, metaverse, sports, and digital arts. NFTs are investment options and generate their values based on what a buyer is willing to pay for them, as displayed on the blockchain technology (Schaar et al.,2022; Ali et al., 2023). The society's rich and famous are flooding the NFT ecosystem, amassing highly valuable NFT investments(Ghelan, 2022). The most common NFTs collections are Azuki, Pudgy Penguins, Crypto Punks, Bored Ape Yacht Club, Lil Pudgys, and Doodles V4.

3.2.4. Central Bank Digital Currency(CBDC)

Central bank digital currency, the newest digital currency in the digital currency ecosystem, is a government-backed digital currency that holds the same essential functions as fiat money as a medium of exchange, store of value, and unit of account(Narayanan,2020; Lee et al., 2022; Dagtekin, 2023). The Bank for International Settlements(BIS) defines CBDC as a digital form of central bank money, denominated in the national unit of accounts, that is different from traditional reserves or settlement accounts (Auer et al., 2022; Dionysopoulos et al., 2023). On the other hand, the International Monetary Fund (IMF) states that CBDC is a digital representation of sovereign currency issued by a nation's central bank as a direct liability of a jurisdiction's central bank or other monetary authority (Kiff et al., 2020; Lee et al., 2022). According to Lee et al.(2022) and Dionysopoulos et al.(2023), the European Central Bank describes CBDC as a form of central bank liability offered in electronic form that is accessible to the large public. Finally, the United States Federal Reserve believes that CBDC is a digital national currency that the Federal Reserve is responsible for holding, transferring, and remitting funds to account holders (Anthony et al.,2022).

Despite these controversies over the definition of the various forms of digital currencies, they have gained significant popularity over the decade, especially among governments, global brands, and other corporate organizations. Thus, they have become integral to their accounting systems and financial statements.

3.3 Digital Assets

Ibrahim (2023) defines digital assets as virtual assets stored in a digital form, which are created not because of their physical form. Luu et al.(2023) describe digital assets as anything that is stored digitally and uniquely identifiable that an entity can use to attain value. Though Cryptocurrency or crypto assets are very commonly referred to as digital assets, it is worth noting that it does not apply to every digital asset (Gunther et al.,2022). As Ibrahim(2023) explained, digital assets can exist in varied forms, such as digital documents and motion pictures, and are stored electronically with computers and audible content. According to Gunther et al.(2022) and Luo et al.(2023), digital assets can be classified as crypto assets, utility tokens, asset-backed tokens, nonfungible tokens (NFTs), stablecoins assets, and Central bank digital currency, which can be either a liability or assets.

Digital assets differed primarily from traditional asset classes (Gunther et al.,2022; Luu et al.,2023). In a traditional asset class, an investor holds a claim against the assets of a business organization through shareholders' equity and debt security as their intrinsic value. On the other hand, digital assets' economic value does not have intrinsic value, just like commodities whose economic value is based solely on mishaps in the financial market. Thus, digital assets have limited market use cases.

3.4. Blockchain Technology

Blockchain is the technology that underpins cryptocurrencies, stablecoins, digital assets, NFTs, and central bank digital currencies(CBDC). Blockchain technology is an auspicious technology that has gained enormous popularity and traction by revolutionizing the peer-to-peer transfer of currencies, data, assets, and information by combining cryptographic principles with decentralization, immutability, and transparency among digital currencies creators, miners, investors, central banks, financial markets, and the accounting profession(Mukherjee et al., 2021; Mourtzis et al., 2023). Blockchain is defined by Prajapati et al.(2024) as a distributed, decentralized ledger that securely and openly records transactions via a network of computers that are made up of a series of blocks with different lists of transactions. On the other hand, Dyball et al.(2021) describe blockchain as a decentralized general open ledger providing a secure infrastructure for transactions amongst unaccustomed parties without any government backing. Mosteanu et al.(2020) and Zhang et al.(2020) portray blockchain as the chronological records of block transactions in a private decentralized ledger that can be used to record the ownership of assets between parties. According to Mosteanu et al.(2020), blockchain technology uses cryptography based on a chain of digital signatures. Blockchain permits users to access the same information in real-time from different sources to transmit sensitive data and set up complex processes (Gulin et al., 2019). Thus, blockchain can be depicted as an anonymous, decentralized

transaction happening in a peer-to-peer network without the need or involvement of a central government authority such as a central bank that would regulate transactions otherwise (Penkin, 2019).

Blockchain technology first came to fame with the launch of the first cryptocurrencies by Satoshi Nakamoto back in 2008, and since then, it has undergone four significant evolutions from blockchain 1.0 to blockchain 4.0 (Mukherjee et al., 2021; Mourtzis et al., 2023). As pointed out by Priom et al. (2024), although blockchain has its roots in Cryptocurrency, the technology has grown beyond digital currencies. The digital currency phases, known as blockchain generation 1.0, originate from the concept of distributed ledger technology, the digital payments system, which eliminated the presence of central authority such as traditional commercial banks and other intermediaries (Mukherjee et al., 2021; Mourtzis et al., 2023; Priom et al., 2024). The challenges that emerged during the blockchain 1.0 era promoted the evolution of blockchain (Mukherjee et al., 2021; Mourtzis et al., 2023). Issues in blockchain 1.0, such as wasteful mining as a result of poor computation time and weak network scalability, led to the advent of blockchain 2.0, which forms the basis for smart contracts and the proof of work mechanisms (Mukherjee et al., 2021; Mourtzis et al., 2023; Penkin et al., 2019). As stated by Priom et al. (2024), the concept of digital finance came from the second generation of blockchain that enhances the transfer of investment assets between parties, such as stocks, bonds, and mortgages. The drawbacks of blockchain 1.0 and 2.0, such as lack of scalability, led to the birth of blockchain 3.0, which focuses on making digital currency globally viable (Dyball et al., 2021; Mourtzis et al., 2023; Penkin et al., 2019). Blockchain 3.0 has expanded the use of blockchain beyond business transactions to voting systems, attestation services, health, arts, and culture (Priom et al., 2024; Penkin et al., 2019). Blockchain 3.0 combines smart contracts and frontend user interface in the name of decentralized Apps (dApp). Blockchain 4.0 is expected to mainstream the blockchain by making the technology ultimately valuable for business environments for developing and running applications (Mukherjee et al., 2021; Mourtzis et al., 2023).

3.5. Financial reporting.

Osadchy et al. (2018) and Kazeem et al. (2017) define financial reporting as a process of analyzing, interpreting, summarizing, and communicating financial accounting information and performance over specific time periods, typically on a monthly, quarterly, or yearly basis, to the reporting entity stakeholders. Accounting professionals (financial controllers, chief finance officers, senior accountants, and internal auditors) in every organization produce external and internal financial reports in line with applicable financial accounting standards and regulatory requirements (Osadchy et al., 2018; Kazeem et al., 2017). Regardless of the size of the organization, financial reports include financial statements (Balance sheet or statement of financial position, Income statements or statement of comprehensive income, Shareholders equity or statement of owners' equity and statement of cash flow, note to financial statements), Management Discussion and Analysis (MDA), Annual report and regulatory filing were applicable (Kazeem et al., 2017).

According to Gaynor et al.(2016), financial reporting primary objective is the creation and provision of financial accounting information on the reporting entity that is useful to current and potential investors, creditors, and other external stakeholders of the reporting entity in making decisions about their stakes in the company operations. On that note, Power (2021) defines financial accounting information as the outcome of recording, summarizing, and reporting an organization's business transactions through financial statements and external reporting systems. Gaynor et al.(2016) and Beyer et al.(2010) further stated that financial accounting information, as described above, is only useful to corporate accounting and external reporting users if they are relevant, presented faithfully, comparable, understandable, verifiable, and on time. Any users of the financial statements expect that the financial report will aid them in evaluating their return on investment and monitoring the use of their stake in the entity.

However, significant corporate failures and scandals like Carillion, Eron, world.com, and several banking failures, coupled with the surging rate of digital assets in big brands' financial statements, inevitably generate serious doubt about the quality of financial reports circulating in the financial system and their ability to meet the expectation and needs of the users of the financial statements (Power, 2021). Hence, E'leimat et al.(2023) explain that high-quality financial reporting is essential for users of an organization's financial statements to make effective decisions and evaluate an organization's health. Kothari(2000) elucidates that the quality of financial reports users receive is a function of the quality of accounting standards governing the presentation and disclosure of financial statements. Therefore, the role of accounting professionals and standard setters is essential and apparent in any sphere of financial reporting to ensure the quality of financial accounting information provided to stakeholders (Jui et al., 2013).

Thus, as rightly stated by E'leimat et al.(2023), improving the quality of financial reporting in the global financial market necessitates a continual modification of existing financial reporting accounting standards and regulatory requirements such as the General Accepted Accounting Principle (GAAP) and the International Financial Reporting Standards (IFRS) to facilitate quality financial reporting by accounting professional to users of the financial statements.

3.6. Auditing

As highlighted above, financial reporting is valuable for internal and external reporting and plays a vital role in stakeholders' decision-making (Coate et al., 2002). A complete set of financial reports is prepared by accounting professionals who report directly to C-suite executives who are employed by the board of directors on behalf of shareholders to manage their investments in the company (Coate et al., 2002; Islam et al., 2010). Thus, a separation of ownership and control in the business ownership structure is known as agency theory (Coate et al., 2002; Islam et al., 2010). According to Fossung et al.(2022), Jensen and Meckling's agency theory of 1976 depicts that since Financial Controllers who are responsible for the production of the complete set of financial statements are employed by C-suite executives, there is a possibility of conflict between the expectations the stakeholders and the application of accounting standards that favored senior management annual bonuses and remuneration. As a result of these potential flaws in the agency

theory, as explained by Islam et al.(2010), a corporate governance structure that includes both auditing and board audit committees was developed to reduce agency problems. Auditing is considered an effective corporate governance mechanism to reduce any opportunistic actions by C-suite executives and ensure the reliability and quality of external financial reporting to stakeholders (Fossung et al., 2022).

Kadiri(2024) defines audit as an examination of the financial statements, reports, documents, procedures, controls, or notices of any issuer, broker, or dealer by an independent public accounting firm in accordance with the requisite auditing standards, for the purpose of expressing an opinion on the financial statements known as audit report. Whiles Antipova et al.(2023) describe auditing as a systematic process of objectively obtaining and evaluating assertions about economic actions and events to ascertain the degree of correspondence between those assertions and established criteria and communicating the results to users of the economic actions. On the other hand, Girardin et al.(2024) believe that auditing is the certification of accounting information provided to Financial Controllers by an external auditor.

The purpose of auditing is to form an opinion on whether the information presented in the financial report, taken as a whole, presents an accurate and fair view of the assets, liabilities, financial position, financial performance, cash flow, and result of operation at a given date (Kadiri, 2024). To form an audit opinion, external auditors select an audit approach to gather sufficient and appropriate evidence, and the reliability of audit evidence significantly impacts the auditor's opinion (Le et al., 2022; Niktaba et al., 2015). Zakari et al.(2013) define audit evidence as the information and records that provide a factual basis for the opinion expressed in the audit report. At the same time, Deana(2010) describes audit evidence as all the information and records used by an auditor to arrive at the conclusion on which the audit opinion is based, similar to that of Zakari et al.(2013). Audit evidence gives the auditor a reasonable assurance that the financial statements do not contain a material misstatement (Florea et al., 2011). According to Florea et al.(2011), reasonable assurance is obtained when the external auditor is able to obtain sufficient and appropriate audit evidence to reduce the risk that the auditor will express an inappropriate opinion on the audit report, known as audit risk. Auditing standards (Statement of Auditing Standards (SAS) 106 and International Standards of Auditing (ISA)) emphasize the importance of auditors to obtain sufficient and appropriate audit evidence to support the audit opinion (Zakari et al.,2013; Girardin et al., 2024; Kadiri, 2024). In their quantitative study on the effect of audit evidence on audit quality, Nugraha et al. (2021) results depict that more audit evidence obtained by an auditor has a direct relationship with audit quality. That is, the more reliable the evidence, the better the audit quality and the audit opinion issued.

Dwelling on corporate governance from the agency theory, audit quality enhances the reliability and accuracy of audit reports. It promotes informed stakeholders' investment decisions and financial stability in the financial system (Kalita et al., 2023). PCAOB defines audit quality as "meeting investors" needs for independent and reliable audits and robust audit committee communication on the financial statements, disclosures, internal control, and ongoing concerns warmings (Gaynor et al., 2016). In a similar view but from a different perspective, Kalita et

al.(2023) describe audit quality as the probability that when an independent certified accountant issues an unqualified or qualified opinion on an entity's financial statements, the results on the financial information presented are without any prejudice. Hence, audit quality shows the extent to which stakeholders and other prospective investors in the financial market recognize the accounting firms' technical and professional capacity to detect and report breaches in the reporting entity's financial reporting system (Carp et al., 2021).

3.7. Financial Reporting and Auditing Standards Setting Bodies

Auditing and financial reporting are two distinct yet interdependent fields in accounting. Financial reporting and auditing complement each other in terms of how audit aims to probe the accuracy and reliability of financial reports, while financial reporting makes the business entity auditable (Yekeen et al., 2024). As Yekeen et al.(2024) explain, both the auditing and financial reporting deliverables are constructed upon a set of principles, standards, and rules that help shape auditors' and accountants' perceptions when performing their respective roles in the accounting profession. Thus, financial reporting accountants and auditors are governed by professional accounting bodies that act as gatekeepers of the accounting professionals to ensure credibility and public confidence in the profession (Clue et al., 2024). As gatekeepers of the accounting profession, professional accounting standard-setting bodies are endowed with substantial public interest responsibilities to promulgate both auditing and accounting standards, rules, and regulations to enforce consistency, transparency, and ethical conduct in financial reporting and auditing practices (Clue et al., 2024; Yekeen et al., 2024).

3.7.1 Financial Reporting Standards Setting Bodies

Financial reporting standards prescribe the accounting principles, rules, and treatments for financial transactions and the financial statements disclosure requirements, which improve the quality of financial reporting and provide the basis for business entities to be auditable (Atuilik et al., 2018). The core objective of the financial reporting standards issued by professional accounting bodies is to make a company's financial statements consistent, transparent, and easily comparable around the world (Fontes et al., 2005). Financial reporting standards apply to all aspects of a business's financial activities, including revenue, expenses, assets, liabilities, equity, and reporting (Tuovila et al., 2024). Financial reporting standards improve transparency, facilitate financial accountability regarding accuracy and reliability, and help accounting professionals maintain trust in the public eye (Tuovila et al., 2024).

The International Accounting Standards Board (IASB), a primary global gatekeeper of the accounting profession, sets accounting standards internationally (Tuovila et al., 2024; Hartley, 2019). IASB developed and issued International Financial Reporting Standards (IFRS). The International Financial Reporting Standards (IFRS) is the most widely used financial reporting standard and has been adopted in 168 countries. In the United States, the Financial Accounting Standards Board (FASB) develops Generally Accepted Accounting Principles (GAAP), which are the commonly accepted accounting standards. Business entities owned and operated in the US follow the principles and rules set by the FASB(Hartley, 2019). Therefore, regarding

financial reporting in the US, accounting professionals look to FASB for guidance on treating financial transactions(Hartley, 2019).

3.7.2 Auditing Standards Setting Bodies

As stated by Muydinov et al.(2021), one of the most vital tools in auditing financial statements is auditing standards. Audit standards dictate how accounting professionals in the audit field should structure their practice, the hiring process, what service to offer, which client to accept, how to conduct audit engagements, staff training needs, and how to reward their professional staff (Muydinov et al.,2021; Knechel, 2013). Hence, auditing standards improve the effectiveness and efficiency of all audits (Knechel, 2013). Auditing standards are formulated in the context of the audit of financial statements. The primary auditing standards-setting body in the world is the International Auditing and Assurance Standards Board (IAASB), which develops and issues International Standards on Auditing (ISA), PCAOB (Public Company Accounting Oversight Board), responsible for developing and setting auditing standards for publicly traded companies in the United States(Boolakay et al., 2011; Gao et al., 2017; Muydinov et al., 2021). The American Institute of Certified Public Accountants (AICPA) establishes the standards for all audits that are performed in the United States (Gao et al., 2017). The AICPA promulgated standards are generally accepted auditing standards(GAAS). Finally, the International Ethics Standards Board for Accountants (IESBA) sets international standards for professional accountants.

The International Auditing and Assurance Standards Board (IAASB) is an independent standard-setting body under the International Foundation for Audit and Ethics (Muydinov et al., 2021; Boolakay et al., 2011). The IAASB's objective is to serve the public interest by setting high-quality auditing standards, thereby enhancing the quality and consistency of practice throughout the world and strengthening public confidence in the global auditing and assurance profession (Muydinov et al., 2021; Boolakay et al., 2011). Auditing standards setters issue these Standards to secure compliance by professional accountants on matters critical for properly discharging their functions(FAS, 2024; Muydinov et al., 2021). Public Company Accounting Oversight Board(PCAOB) was created by the US Congress in 2003 in the wake of audit failures in the 2000s to ensure that auditors of public companies in the US follow strict audit guidelines (Gao et al., 2017). According to Gao et al.(2017), PCAOB established auditing standards for public company auditors in the US to follow in audit engagements and disciplinary authority to sanction non-compliance.

The development and existence of appropriate, high-quality financial reporting and auditing standards is the first phase in the road to quality financial reporting and auditing of financial statements(Burns et al., 2010; Knechel, 2013). This makes it easier for users of financial statements to analyze and extract useful financial information from the entity's annual financial reports and compare the financial information across different companies (Burns et al., 2010; Knechel, 2013). Thus, effective financial reporting and auditing standards issued by the standard-setting bodies should consider complex and emerging issues in the accounting industry

that influence accounting professional behavior and judgments in executing their duties and responsibilities (Burns et al., 2010; Knechel, 2013).

As a consequence of globalization and technological development coupled with the emergence of fintech products, digital currencies, and blockchain technology, the accounting industry is evolving, and shifting and the coverage of accounting professionals' roles and responsibilities is transforming, and the public expectations are changing (Gulin et al., 2019; Joshi et al., 2008). Moreover, as explained by Gulin et al.(2019) and Mircea et al.(2022), a significant emphasis has been on financial reporting and auditing standards-setting bodies themselves in producing new standards, rules, and principles to address the significant influence of digital technology and globalization on the financial accounting information produced by accounting professionals. Accounting standards, rules, principles, and accepted accounting practices affect how resources are produced and distributed by accounting professionals in the financial market (Jui et al., 2013; Mircea et al., 2022).

Accounting standards, rules, and principles established by the financial reporting and auditing standard-setting bodies have been the same for many years (Gulin et al., 2019). However, the globalization of business, technological advancement, and constant financial innovation like digital currencies in the financial market have increased the need for high-quality, comparable financial information across entities within national and international boards(Joshi et al., 2008). Thus, the concern and challenges for the accounting professionals who are at the forefront of all these happenings in the global financial system are reflected in need for financial reporting and auditing standard-setting bodies such as the IASB, FASB, PCAOB intervention, development and issuance of both financial reporting and auditing standards without abandoning away from the fundamental principles and practices of accounting and auditing to enhance the credibility and quality of accounting professionals deliverables (Gulin et al., 2019; Joshi et al., 2008).

3.8. Accounting Professionals

Understanding the public image of accounting professionals in the accounting industry is important to appreciating their roles in global financial markets (Carnegie et al., 2009). Accounting professionals are financial experts who record, analyze, prepare, examine, evaluate, and monitor financial transactions and financial information for private individuals, firms, public organizations, and government entities (Kagan et al.,2024; Jui et al., 2013). They prepare financial statements and disclosures, examine financial records, identify potential areas of opportunity and risk, provide strategic advisory services, and ensure that financials and data risks are evaluated(Jui et al., 2013). Accounting professionals work for large corporations, external accounting firms, private practices, government agencies, small corporations, and not-for-profit organizations(Kagan et al.,2024). As a result of the multifaceted nature of the accounting professional role, they are required to meet specific professional education and testing requirements such as Chartered Financial Analyst (CFA), Certified Public Accountant(CPA), Chartered Financial Modeler(CFM), Certified Management Accountant(CMA), Certified Chartered Accountant (ACCA), Certified Investment Management Analyst(CIMA), Certified Internal Auditor (CIA) or Certified Financial Planner (CFP) (Joshi et al., 2008; Kagan et

al.,2024; Jui et al., 2013). Accounting professionals do not work in isolation; in performing their functions in the accounting industry, they must comply with the standards and rules set out by professional standard-setting bodies and regulators, and maintain and improve their professional knowledge on the latest development in the accounting industry (Mircea et al., 2022; Hartley, 2019).

Accounting professionals plays an indispensable role in these evolving digital innovations in the global financial market landscape. Thus, to uphold their values of integrity, professional competence, due care, objectivity, and confidentiality as protectors of public interest in the public eye, they must provide access to high-quality financial reports and audited financial statements to facilitate stakeholders' decision-making (Abani et al., 2022; Joshi et al., 2008). However, as of September 30, 2024, the IASB, FASB, IAASB, PCAOB, and AICPA, the leading global standards-setting bodies, are yet to formally issue accounting and auditing standards or guidance for digital currencies that will enhance quality financial reporting and auditing amongst accounting professionals in the accounting industry.

4. Methodology Analysis

This research paper exploits the qualitative exploratory research method solely based on the analysis of the literature review. To achieve the research goal and answer the question: "What are the concerns for accounting professionals in the accounting industry on digital currencies financial reporting and auditing?" Relevant academic and professional literature was reviewed and analyzed.

Multiple resources were beneficial in acquiring the literature for this research paper. The multiple resources include Google Scholar, google, government websites, and industry publications. Scholarly peer-reviewed articles were obtained through the EBSCO host portal, Springer link, Gale virtual reference library, and Sage journal within Google Scholar. Segmented databases accessed included Google, Research Gate, and Academic Search Premier. Keywords searched for retrieval of pieces of literature for the review including but not limited to electronic digital currencies, auditing standards, financial reporting standards, accounting for digital currencies, auditing digital currencies, the accounting profession, digital currencies financial reporting, digital currencies auditing, blockchain technology, cryptocurrencies, central bank digital currencies, stablecoins, NFT, auditing, financial reporting. Professional papers were obtained through a web search engine of standard-setting bodies for accounting and audit auditing firms. Selected academic scholarly literature and professional papers were analyzed using induction and deduction scientific research methods of analysis and synthesis, abstraction, and generalization methods.

5. Results

The accounting profession is a profession of public trust as current stakeholder and prospective stakeholders expect financials and audit reports prepared and presented by accounting professionals to be prepared in accordance with applicable financial reporting framework and

free from material misstatements due to errors or fraud as indicated in auditing standards and guidance (Nugraha et al., 2021). From a financial reporting and auditing perspective, the advent of digital currencies in corporate entities accounting information records comes with new concerns, risks, and challenges for accounting professionals in financial reporting and auditing (Habib et al., 2014; Hsieh et al., 2022). Hence, the study has identified and summarized five (5) news concerns for accounting professionals regarding digital currency financial reporting and auditing, namely: Digital currency financial reporting standard; Nonauthoritative auditing standards for digital currencies audits; digital currency regulations; digital currencies related crimes; Litigation risks; block chain technology.

5.1 Digital Currencies Financial Reporting Standards

Digital assets are rapidly evolving in the global financial systems in terms of both trading volume and amount in circulation (Alsalmi et al., 2023). However, there are no universal accounting standards from global accounting standard setters for digital currencies when writing this research paper (Asalmi et al., 2023). Accounting for digital currencies remains a concern for accounting professionals in the accounting industry (Cirnu, 2024). The classification and accounting for digital currencies in holding companies' financial reports are based on the financial reporting framework, accounting professionals' judgments, and the underlying characteristics of the features of the specific digital currencies held by the company(Jackson et al., 2023). Furthermore, the accounting guidance and accounting standards on crypto assets issued by IASB and FASB have inconsistency and distorting flaws and do not take into consideration the substance of crypto assets, which profoundly brought confusion amongst accounting professionals when accounting, classifying, and evaluating digital assets values for financial and audit report (Luo et al., 2024). Therefore, IASB, FASB, and other globally accepted financial reporting bodies must develop universal accounting standards and guidance on accounting professionals' accounts for Cryptocurrency, stablecoins, NFTs, and CBDCs on their financial statements. Luo et al.(2024) pointed out that through proper financial reporting of digital currencies, business organizations can communicate with investors, and government agencies can ascertain tax implications.

5.2 Digital Currencies Auditing Standards

Financial statement audits are becoming more likely to contain account balances and classes of transactions involving digital assets as businesses are increasingly holding digital assets and using them in their operations (Vincent et al., 2020; Dupuis et al., 2023). Owing to the anonymity associated with digital assets, accounting professionals need a thorough understanding of digital assets, the audit trail, and the vulnerabilities in each digital currency transaction undertaken by the audit client (Dupuis et al., 2023). Hence, the lack of authoritative auditing standards from global standard-setting bodies is a significant concern for accounting professionals when designing audit approaches and procedures to form an opinion as to whether the digital assets account balances in the financial statements increase the risk of material misstatement a recipe for audit failure (Vicent et al., 2020; Dupuis et al., 2023; Capatan et al., 2023). As posited by Mahdavi et al.(2012), auditing standards impact the auditor's opinion by

enhancing the audit documentation and increasing the audit quality, the basis of audit opinion in the audit report. Though standard-setting bodies such as PCAOB and AICPA have issued unofficial recommendations concerning the audit of digital currencies, the absence of established auditing standards heightened the risk for digital currency audits for clients with significant digital assets in their financial statements (Kamau et al., 2023; Vincent et al., 2020; Dupuis et al., 2023). Due to limited audit trail, valuation difficulties, and security and custody risk (Kamau et al., 2023; Vincent et al., 2020; Dupuis et al., 2023). Therefore, IAASB, PCAOB, and AICPA should consider providing auditing standards to aid accounting professionals in auditing financial statements and digital assets account balances.

5.3 Digital Currencies Regulations

Digital currency financial reporting and auditing present multiple challenges that accounting professionals must navigate to ensure accurate and reliable financial and audit reports for stakeholders (Kamau et al., 2023). Thus, the lack of well-established authoritative and non-authoritative regulations poses a concern and challenge for accounting professionals (Kamau et al., 2023; Capatan et al., 2023). According to Capatan et al.(2023), digital currencies, like any other emerging blue ocean digital innovation in the financial market, require regulation to regulate their uses safely and responsibly. Therefore, governments and regulatory bodies worldwide should be drawn towards establishing global regulations for digital currencies. Furthermore, as posited by Ibrahim et al.(2023), the global nature of digital currencies gives rise to multiple jurisdictions issues bordering on laws of various jurisdictions, which will have significant implications for digital currencies' financial reporting and auditing. Thus, as digital currencies continue to reshape the accounting profession's role, government agencies and global regulators should examine the implications of the absence of digital currency regulation on accounting professionals, organization governance, and stakeholders' trust (Rahman et al., 2021).

5.4 Digital Currencies-Related Crimes

The primary task of accounting professionals is to prepare and examine financial records to ensure they are accurate, complete, comparable, and understandable to enhance stakeholders' decision-making (Moore, 2018). Digital currencies are a unique ecosystem, traded on numerous exchanges worldwide and accepted as payment tools in over 134 countries. Thus, the interconnected nature of digital currencies and their reliance on blockchain technology have heightened malicious actors and made business organizations vulnerable to a wide range of digital currencies related crimes such as hacking, fraud, ransomware, money laundering, darknet, and theft (Rahman et al., 2021; Kamau et al., 2023; Casella, 2024). Cybersecurity threats pose significant and evolving concerns for accounting professionals in the digital currencies ecosystem. Financial and audit report issues such as digital currencies valuations and fair value measurement, fraud risk factors, audit trail, security control assessment, ownership, and completeness become huge concerns for both financial reporting and audit professionals dealing with clients holding digital currencies (Rahman et al., 2021; Kamau et al., 2023; Casella, 2024).

5.5 Litigation risk

Litigation risk within the accounting profession refers to the legal obligation placed upon accounting professionals for mistakes, mishaps, and negligent results from fraudulent financial reporting, failure to detect fraud, financial statements irregularities, violating accounting and audit standards, and the absence of clear communication of audit outcome(Rotimi, 2024; Habib et al., 2014; Dong et al., 2024). As Habib et al.(2014) and Rotimi (2024) state, litigation comes with costs and consequences such as loss of accounting professional reputation, loss of individuals or firm practicing license, loss of clientele, settlement cost, and stress associated with being a defendant in the lawsuit. Therefore, the nonexistence of comprehensive and universal auditing standards for digital currencies to prepare and present financial and audit reports brought deep conundrums, including litigation risk for accounting professionals(Wilson et al., 2018). Digital currency's financial reporting and auditing increase the possibility of litigation risk for accounting professionals. Goodwin April 30, 2024, Digital currencies and blockchain litigation reports reveal numerous digital currencies-related litigation for financial report and audit clients. As a result of these fears and as Aaron(2024) posited, Big 4 accounting firms are refusing to audit clients holding significant digital assets in their financial statements. For instance, several Big 4 accounting firms are unwilling to audit USDT stablecoins reserves despite Tether's significant role in the digital currency market. Big Four accounting perceived and feared litigation and reputation risk associated with USDT Tether's audit.

5.6 Blockchain Technology

The recent changes in technological innovation in the financial market have dramatically changed the accounting profession (Zhang et al., 2020). Although the blockchain phenomenon arouses some enthusiasm and benefits to the accounting profession, it is not exempt from stirring even some concerns for accounting professionals (Mosteanu et al., 2020). One of these concerns is a paradigm shift in the roles as well as the function of accounting professionals because accounting and audit functions are closely connected to their clients ' distributed ledgers transactions, which are later translated into monetary values, and assurance is provided regarding the value (Dyball et al., 2021; Zhang et al., 2020; Penkin, 2019). As posited by Zhang et al.(2020), blockchain technology has the potential to impact the way transactions are initiated, processed, authorized, recorded, and reported. However, blockchain trustworthiness augments data security, real-time auditing, proactive fraud detection, accuracy, and integrity of recorded financial data, enhancing the quality of financial and audit reports. However, as explained by Danach et al.(2024) study on the impact of blockchain on financial reporting and auditing, the downsize implications for accounting professionals are numerous. Ibrahim et al.(2023) and Danach et al.(2024) state that blockchain integration complexity, data confidentiality and privacy issues, scalability, lack of IT auditing standards, data ownership issues, and immutability and erasure right issues present significant concerns for accounting professionals.

6. Discussions

The outcome of the literature review analysis in this study: Digital currencies financial reporting and audit of digital currencies concerns for accounting professionals are considered in this section as shown below:

6.1. Digital Currencies Financial Reporting

Financial statement fraud has received considerable attention from the public, regulators, news networks, investors, and global financial systems due to high-profile scandals and collapse of large public corporations such as Enron corporation, WorldCom, Xerox, Global Crossing, Rite Aid, Sunbeam in the USA, Royal holdings in the Netherlands, HH in Australia, Parmalat in Italy and the Equitable Life Assurance Society in United Kingdom(UK) (Carnegie et al., 2009; Rezaee, 2005). Accounting professionals of these corporations were accused of cooking books and fraudulent financial reporting (Carnegie et al., 2009; Rezaee, 2002). Even though the general public extensively condemned these practices, they sharply undermined the reliability, transparency, and uniformity of financial reporting and public confidence in the accounting profession (Carnegie et al., 2009; Rezaee, 2002). Today's popular question is, "Are accounting professionals about to witness this same trend in digital currencies' financial reporting?"

Given the growth of digital currencies utilization as a payment platform, medium of exchange, and investment purpose from corporation organizations and the general population, accounting professionals should be prepared to handle digital currencies in the financial reporting assets class either in the face of the financial statements or disclosures in the notes to the financial statements(Gunther et al., 2022; Vincent et al., 2022). With the market capitalization value of digital assets rising yearly, digital assets financial reporting in large and small corporation financial statements is becoming a concern and challenge for financial reporting purposes (Gunther et al., 2022; Vincent et al., 2022).

Thus, accounting professionals in the financial reporting field need digital currency financial reporting standards, rules, and regulations to produce high-quality, reliable, consistent, transparent, and comparable financial reports (Rezaee, 2002). However, as stated earlier, as of September 30, 2024, the IASB and FASB, the two most recognized and authoritative financial reporting standard-setting bodies worldwide, are yet to formally issue comprehensive, comparable universal financial reporting standards or guidance for digital assets. Hence, accounting professionals strive to absorb and effectively deal with an ever-growing mix of digital assets in corporate organization accounting systems without universal financial reporting standards and rules to guide the preparation of financial reports and submission of high financial reports to stakeholders (Leopold et al.,2019; Bosh off, 2024).

Notwithstanding, in June 2019, IASB only published an agenda decision for accounting for crypto assets (Leopold et al.,2019; Boshoff, 2024). The agenda decision states that crypto assets should be recognized either as IAS 2 inventories or IAS 38 intangible assets (Leopold et al.,2019; Boshoff, 2024). Similarly, FASB, on December 13, 2023, issued ASU 2023-08, which

requires crypto assets that meet the definition of intangible assets to be subsequently measured at fair value through net income for each reporting period and presented as a separate line item in the balance sheet with additional disclosures on the note to the financial statements on cryptocurrency holding (McKinney et al., 2023; Paul et al., 2023).

However, the accounting guidance and standards issued for crypto assets by IASB and FASB do not capture a uniform accounting treatment for crypto assets, nor do they consider the nature, classification, and characteristics of crypto assets (Morozova et al., 2020). To suffice these claims, in their qualitative study on crypto assets models in financial reporting, Morozova et al. (2020) state that the accounting professional community, including the big four auditing firms, believes that crypto assets can be classified as a substitute for fiat currencies (Cash), inventories, financial assets, and intangible assets. Another qualitative study by Luo et al. (2023) supports Morozova et al. (2020) prerogative on the current accounting treatments of crypto assets amongst accounting professionals. According to Luo et al. (2023), crypto assets can be classified as cash, financial assets, inventory, and intangible assets. Finally, in a similar outcome, Ibrahim et al. (2021) posit that crypto assets could be accounted for in the financial statements as financial instruments (IFRS 9), inventories (IAS 2), cash (IAS 7), and intangible assets (IAS 38). Therefore, one can safely say that the financial reporting standard and decision agenda for crypto assets issued by IASB and FASB are insufficient for accounting professionals to apply when preparing and reporting accounting information to stakeholders, a fact illustrated by both Luo et al. (2023) and Morozova et al. (2020). Moreover, it is worth noting that as of October 31, 2024, IASB and FASB have not issued exclusive, authoritative guidance or standards for non-cryptocurrency digital assets such as nonfungible tokens (NFTs), stable coins (asset-backed tokens), and CBDC (Luo et al., 2023; Jackson et al., 2023).

The concerns surrounding current practices amongst accounting professionals for digital assets primarily centered around the qualitative characteristics of consistency, understandability, and comparability (Jackson et al., 2023). The newness, uncertainty in usage, and lack of clear, authoritative accounting standards and guidance for digital currencies will lead to complexity and poor-quality financial reports, which will in turn impact society's perception and the legitimacy of the accounting professionals (Carnegie et al., 2023; Jackson et al., 2023). Furthermore, due to the lack of clear, authoritative guidance and financial reporting standards to address digital assets financial reporting, accounting professionals in corporate settings are required to exercise significant judgment and rely on concept statements, principle-based accounting, non-authoritative information, and other unrelated financial reporting standards and guidance (Carnegie et al., 2023; Jackson et al., 2023). Consequently, great diversity exists among accounting professionals when accounting and reporting on digital currencies in financial statements.

For instance, despite the fact that FASB and IASB standards and agenda decision requires for crypto assets to be accounted for as intangible assets and inventories, the substance of crypto assets transactions and investments may not fit these standards and guidance taking into consideration the differing stakeholders in the cryptocurrency ecosystem (Jackson et al., 2023).

The mixed reaction from accounting professionals including the Big 4 accounting firms like Deloitte US and PWC, is that FASB and IASB accounting standards do not address intangible assets being held for speculative or investment purposes and cash-like features used as a medium of exchange and payment of goods and services especially for El-Salvador and other countries that have adopted crypto as legal tender (PWC, 2024; Jackson et al., 2023; Perraud et al., 2024). Similarly, Jackson et al.(2023), states that, while accounting for inventories (IAS2) as per the IASB decision agenda could apply to cryptocurrencies held for sale in the ordinary course of business, the concerns amongst accounting professionals have been that the non-value additive features do not fit within the scope of IAS 2. Thus, contradictions in the interpretation of both FASB and IASB standards have led to differing interpretations and applications for crypto holding by accounting professionals (Moosa et al., 2023).

6.1.1. Current Practices in Financial Reporting for Non-Crypto Digital Assets

As the time of writing these study, there exist no accounting standards (IFRS or GAAP) specifically addressing accounting practices for stablecoins, NFTs, and CBDC. Hence, accounting professionals rely on concept statements, existing standards, non-authoritative guidance, and discretionary judgments to account for non-crypto digital assets(Luo et al., 2022). Below are the current accounting practices for the interpretations and applications for Nonfungible Tokens (NFTs), stablecoins, and CBDC presently in the balance sheet, income statements, and cash flow statements.

6.1.1.2. Nonfungible Tokens (NFTs)

According to Project(2023) and Sarang et al.(2023), using IFRS as the basis for their proposed accounting treatment, NFTs meet the definition of intangible assets (IAS 38) and inventories(IAS2) thus should be accounted for as such. However, Muir et al. (2024) in a different view to that of Project(2023) and Sarang et al.(2023), states that NFTs convey another identifiable right, which differs from the perspective of crypto intangible assets. Muir et al. (2024) pointed out that ASC 350-60 definition of intangible assets a failed NFTs fungibility and frequency test to be classified as intangible assets. Muir et al. (2024) further suggested that NFTs' IP ownership and licenses is what qualified as intangible assets under GAAP topic 350-30-40 and NFTs unspecified future rights, hosting fees, custodial services, and storage services should be accounted for as prepaid assets under GAAP topic 340. Whiles ownership of physical tangible NFTs should be accounted for as property, plant and equipment's (Topic 360) or inventory (Topic 330) (Muir et al.,2024). Kim et al.(2022) suggested that NFTs licenses should be accounted for under ASC 606 whiles investments or purchase of NFTs should be accounted using ASC 350. Sales of NFTs should be accounted for under the scope of ASC 606 (Kim et al., 2022). Notwithstanding, it worthwhile noting that IASB the widely used financial reporting standard to a large quite on the interpretations and applications NFT holdings by entities.

6.1.1.3. Stable coins

Muir et al. (2024) states that stablecoins does not meet the complete definition of intangible assets because they are pegged to a fiat currency(Euro) or commodity(oil), a view also shared by

PWC(2023). PWC(2023) states that to account for a stablecoin, accounting professionals must first determine if the stablecoin meets the definition of financial assets, that is, if the contract provides a right to receive cash or another financial instrument from another entity. On the other hand, Perraud et al. (2022) posit that stablecoins can be accounted for as financial instruments, derivatives, debt, equity, and receivables from a GAAP perspective. This differing interpretation and applications resulted in NFTs being accounted for differently by accounting professionals both in corporate and accounting firms (Moosa et al., 2023). In terms of stablecoin classification and accounting IASB are silent.

6.1.1.4. Central Bank Digital Currency (CBDC)-

CBDC does not meet the definition of Intangible assets because CBDC will generally not meet FASB and IASB's definition of intangible assets (KPMG, 2024). CBDC, as a legal tender and substitute for fiat currency, is considered by central banks as cash. However, CBDC does not meet the definition of cash in accordance with IAS 7 (Alsalmi et al., 2023). Alsalmi et al.(2023) claim that IFRS 9 and IAS 32 are the appropriate accounting treatment for CBDC.

Accounting information and financial reports prepared by accounting professionals are only as valuable as their comparability, consistency, usefulness, and understandability to users of the financial statements produced. The absence of authoritative guidance and consistent reporting standards for the ever-growing digital currencies allows several options to be put forward by accounting professionals in the accounting industry as a solution to digital currencies' financial reporting, thus breeding opportunities for unethical and fraudulent financial reporting that meant that investors and regulators are not working with the same types of corporate financial reporting—a recipe for another global financial crisis in the event of any bubble burst.

6.2. *Blockchain Financial Reporting and Auditing.*

Blockchain technology has augmented the transformations of business operations worldwide, from enabling digital currencies, decentralized ledgers, and smart contracts to improving supply chain management and storing health sector data and medical records (Coyne et al., 2024; Alsalmi et al., 2023). The evolution and transformative nature of blockchain not only prompt the reevaluation of the fundamental principles of financial reporting and auditing but also reshape the roles of accounting professionals in the accounting industry (Coyne et al., 2024; Dyball et al., 2021; Priom et al., 2024). According to Coyne et al.(2024), blockchain's potential to ensure accurate information processing will make financial transactions more transparent and thus contribute to greater public confidence in published audited financial statements by accounting professionals. As further explained by Pravdiuk et al.(2024), applying blockchain triple-entry to the existing bookkeeping conventional double-entry accounting system will introduce a supplementary verification tier of verification and transparency to accounting data. Hence augmenting the security and transparency of accounting information systems and guaranteeing the precision, accuracy, and quality of financial reports prepared by accounting professionals (Coyne et al., 2024; Pravdiuk et al.,2024). This aspect is important as it will help mitigate accounting information system risks associated with fraud and errors, thereby enhancing the

transparency and credibility of financial reporting and high-quality audit reports (Coyne et al., 2024; Pravdiuk et al.,2024).

Today, Big 4 accounting firms Deloitte, PwC, KPMG, and EY are investing heavily in blockchain technology to automate the audit processes for traceable audit trails, authentication of financial reporting transactions, and tracking of digital assets ownership (Zhang et al.,2020). As Coyne et al.(2024) ascribed, the Big 4 accounting firms foresee the future impact of blockchain-decentralized distributed ledger technologies on accounting professionals. Scholars like Dyball et al.(2021) stated that blockchain technology creates positive and negative implications for the accounting professional. One concern Pravdiuk et al.(2024) put forth is integrating blockchain technology with other systems and adapting to regulatory prerequisites. At the same time, Coyne et al.(2024) stated that manipulation and accounting fraud, loss of confidentiality, and alteration of accounting data are still possible within the blockchain.

So, while blockchain's impact on financial reporting and auditing may not yet be fully felt, as with any new disruptive technology, it is important to understand the consequences and concerns, as well as how accounting professionals will move forward as adoption of blockchain technology continues to accelerate and become mainstream.

6.3. Digital Currencies Auditing

Independent Auditors (CPAs, known as accounting professionals) perform financial statements audits to provide reasonable assurance as to whether, in their opinion, the company's financial statements reflect in all material respects the company's financial performance and financial position as of a particular date in accordance with relevant IFRS, GAAP and other financial reporting framework (Coate et al., 2002). As stated by Niktaba et al.(2015), an Independent auditor (CPA) issued audit report is the final product of an audit engagement containing their judgment about the quality and content of opinions expressed on the client's financial statements, creating certainty for users of the financial statements. Independent Auditors (CPAs) have an ethical responsibility to perform an audit that provides reasonable assurance of detecting misstatements due to fraud or errors because investors and creditors place great reliance and comfort on the audit report in making their investment and credit decisions thus, it is imperative that the audited financial statements fairly present, in all material respects, the company's financial position and performance (PWC, 2017; Coate et al., 2002).

According to Le et al.(2022), the audit approach depicts the audit outcome and the opinion issued as revealed in auditing standards. A wrong audit approach leads to insufficient and inappropriate audit evidence, which subsequently increases the risk of audit failure and accounting scandals, which have negative implications for accounting professionals in the accounting industry (Le et al.,2022). Le et al.(2022) study outcome is supported by Coate et al.(2002), Rahman et al.(2020), and Xie et al.. (2021). Coate et al.(2002), Rahman et al.(2020), and Xie et al.. (2021) state that a failed financial statements audit occurs when auditors choose an inappropriate audit approach and then deviation from applicable accounting and auditing standards in such a way that auditor failed to appropriately detect, and report known material

misstatement and thus issued an inappropriate audit opinion known as audit failure. Subsequently, audit failure results in costly accounting scandals (Awolowo et al., 2016; Xie et al., 2021). Hence, as put forward by Xie et al.(2021), accounting scandals due to audit failures in the past have led to the collapse of corporations, made employees lose their jobs, investors suffer tremendous financial losses, and auditors fines, faced reputational damage and sometimes goes out of business.

Auditors are tasked with ensuring that financial statements are free of material statements due to fraud and errors and evaluating the effectiveness of internal controls during an audit engagement. Therefore, in an ever-evolving digital currency utilization and holding in the global financial market, accounting professionals in the audit field are confronted with formidable obstacles that impede the effective conduct of the audit, obtaining sufficient and appropriate audit evidence to support the audit opinion in the audit report (Dupuis et al., 2023; Rahman et al., 2021 PWC, 2017). As Ozeran et al.(2020) put forward, auditing financial statements containing digital assets has been challenging for accounting professionals, including the Big 4 accounting firms, because digital assets-related transactions require different knowledge, methodology, and approaches than other account balances in financial statements. The distinct nature of digital currencies from the usual set of financial statements class and characteristics makes it more thought-provoking for external auditors to provide reasonable assurance on the financial statements audited and express an appropriate audit opinion on the audit report (Hsieh et al., 2022 Dupuis et al., 2023). Furthermore, the lack of official authoritative guidance from auditing standard setters to prevent auditors from taking a wrong audit approach to collect sufficient and appropriate audit evidence increases the risk of audit failure for accounting professionals auditing financial statements with digital currencies (Vicent et al., 2020; Knechel et al., 2013). Yuan et al.'s (2019) conclusion in their study " The Consequence of Audit Failure on Audit Firms" states that audit failure significantly impacts accounting firms' reputation and results in numerous adverse consequences such as litigation risk and loss of practicing license. Moreover, Pratt et al.(1994) state that litigation risk has become increasingly concerning for accounting professionals, including the Big 4 accounting firms. One such example is Arthur Andersen, who lost their global practicing licensing for their role in the Eron audit failure scandal(Handley et al., 2005).

Interestingly, in all the accounting scandals that have occurred in the past two decades, the investing public and the corporate ecosystem never ask who the C-suite executives or the board of directors are; the first question regulators, investing public, business community and media are always quick to ask is who the auditors are (Awolowo et al., 2016; Yuan et al., 2019). Therefore, as global organizations and governments increasingly embrace digital currencies as a medium of exchange, payment system and investment assets, speculative financial instruments, the realm of auditing confronts a multifaceted paradigm shift and thus reduces audit quality, which will result in audit failure and subsequently, various scandals for accounting professionals in the accounting industry(Rahman et al., 2021; Xie et al., 2021).

7. Conclusion and Recommendations

When standard setters and regulators fail to keep pace with technological innovation, vulnerable people like accounting professionals in the accounting industry often suffer the most significant harm. As the number of digital assets held in corporate organization financial reports and audited financial statements increases, it creates negative implications for accounting professionals. The study highlights accounting professionals' concerns when clients have digital assets such as cryptocurrencies, stablecoins, NFTs, and CBDC in their financial statements. Specifically, the study results and discussion reveal a lack of comprehensive and universal financial reporting standards, Nonauthoritative auditing standards, the nonexistence of digital currencies regulations, heightened digital currencies-related crimes, possible litigation risks faced by accounting professionals, blockchain technology financial reporting and auditing as the current concerns faced by accounting professionals.

Digital currencies are here to stay, and while we cannot change the fact that they are disrupting the accounting profession when auditing and reporting on them, digital currencies are not devoid of their virtue. Thus, we can choose to embrace them and find value-added ways to serve our clients because the world will continue to evolve with novelty financial innovation . Therefore, IASB, IAASB, PCAOB, FASB, AICPA, SEC, and global regulators as gatekeepers of the accounting profession have to advance with it. Hence, it becomes imperative for standard-setting bodies and regulators to develop and release comprehensive and uniform, global financial reporting standards, auditing standards and digital currencies regulations for digital currencies to avoid discretionary judgment currently relied upon by accounting professionals that will alleviate almost all their concerns when performing digital currencies financial reporting and auditing engagements.

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