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Investing in blockchain technologies and digital assets: accounting perspectives

Улагање у блокчејн технологије и дигиталну имовину: рачуноводствене перспективе

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Сажетак: Овај рад испитује сложену слику дигиталних валута, нефунгибилних токена (NFT) и дистрибуиране технологије евиденције (DLT), фокусирајући се на њихове импликације у оквиру сектора рачуноводства и финансијског извештавања. Пораст популарности ових средстава донео је изазове и комплексности у извештавању. Недостатак свеобухватних рачуноводствених стандарда и дигитализација процеса финансијског извештавања даље усложњавају ситуацију. Ови изазови истичу потребу за ажурирањем рачуноводствених пракси у складу са сигурношћу и транспарентношћу које нуди DLT. Студија испитује Међународне стандарде финансијског извештавања (IFRS) за извештавање о дигиталним валутама, анализирајући њихове импликације и потенцијална решења за рачуноводствену заједницу. Централно питање овог истраживања је: Како рачуноводствени сектор може да савлада вишеструке изазове и да искористи разноврсне прилике које произилазе из дигиталних валута, NFT-а и DLT-а? Користећи свеобухватан приступ истраживању, који укључује преглед литературе, емпиријску анализу, студије случаја и компаративну анализу, ова студија идентификује стратегије за управљање комплексностима извештавања о дигиталним средствима. Такође, она истиче важност колаборативног диалога између заинтересованих страна и регулатора да би се обезбедила конзистентност у еволутираном окружењу. Овај рад водич је рачуноводственом и инвестиционом сектору у доношењу информисаних одлука, утемељених на нијансираном разумевању еволутирајућег терена дигиталних средстава.

Кључне речи: нелефунгибилни токени, технологија блокчејна, дигиталне валуте, финансијско извештавање, Међународни рачуноводствени стандарди
JEL класификација: M31, G32, O33, Q53

Abstract: This paper examines the complex landscape of digital currencies, non-fungible tokens (NFTs), and distributed ledger technology (DLT), focusing on their implications within the accounting and financial reporting sector. The surge in popularity of these assets has brought about reporting challenges and complexities. The lack of comprehensive accounting standards and the digitization of financial reporting processes further

compound the situation. These challenges underscore the need to update accounting practices to align with the security and transparency offered by DLT. The study examines the International Financial Reporting Standards (IFRS) for digital currency reporting, analysing their implications and potential solutions for the accounting community. Central to this exploration is the question: How can the accounting sector navigate the multifaceted challenges and harness the multifarious opportunities that stem from digital currencies, NFTs, and DLT? Using a comprehensive research approach, including a literature review, empirical analysis, case studies, and comparative analysis, this study identifies strategies for managing the reporting complexities of digital assets. It also highlights the importance of collaborative dialogue between stakeholders and regulators to ensure consistency in an evolving landscape. This paper guides the accounting and investment sector in making informed decisions, fortified by a nuanced understanding of the evolving digital asset terrain.
Keywords: non-fungible tokens, blockchain technology, digital currencies, financial reporting, International Accounting standards
JEL classification: M31, G32, O33, Q53

Introduction

The integration of digital technology has become an essential aspect of our daily lives, influencing various systems and processes (Krivokuća et al., 2021; Kurtlu & Uçar, 2022). Every company must adapt to the changes in a digital environment. In the era of digital transformation, companies are increasingly aware of the importance of information technologies and are making structural changes to their businesses to accommodate them (Ljumović et al. 2021; Raković et al., 2022; Vuković et al., 2023; Jevtić & Milovanović, 2023). In recent years, the emergence of digital currencies, non-fungible tokens (NFTs), and distributed ledger technology (DLT) have ushered in a paradigm shift in the financial landscape (Vuković et al., 2023; Leibowitz, 2016; Narayanan et al., 2016). As these innovative technologies gain momentum, their implications extend far beyond their technological underpinnings, causing significant changes in accounting practices and investment strategies (Wu et al., 2019; Griffin, 2021; Chalmers et al., 2022; Wilson, Karg & Ghaderi, 2022; Guesmi et al., 2019).

Since the advent of Bitcoin in January 2009, cryptocurrencies have been in the focus of interest of the academic community (Tomić & Todorović, 2020, 13). The growing adoption of digital currencies, exemplified by the rise of cryptocurrencies such as Bitcoin and Ethereum, has captured the attention of diverse stakeholders, including investors, policymakers, and financial institutions (Leibowitz, 2016; Narayanan et al., 2016). The key driver of this phenomenon is the potential to revolutionize traditional financial transactions, improving efficiency, transparency, and accessibility (Wu et al., 2019). However, this transformation also introduces challenges in terms of their valuation, recognition, and reporting under existing accounting standards (Wu et al., 2019; Griffin, 2021).

NFTs, on the other hand, have gained attention for their ability to represent ownership of unique digital assets, such as digital art and collectibles, through blockchain (Griffin, 2021; Tomić et al., 2023). NFTs have seen a surge in interest, which highlights the evolving nature of ownership and the emergence of new investment opportunities (Chalmers et al., 2022; Wilson, Karg & Ghaderi, 2022).

Nevertheless, the accounting treatment of these assets is still being developed, challenging established practices and raising questions about their categorization and valuation (Griffin, 2021; Grujić, 2022).

The DLT that underpins digital currencies and NFTs holds the promise of enhanced security, transparency, and efficiency across financial transactions (Griffin, 2021). The potential to increase efficiency and reduce costs introduces new avenues for cost savings and risk management (Guesmi et al., 2019). However, the transition to DLT-powered systems is not without challenges, such as regulatory uncertainty, data privacy concerns, and the need to integrate with existing financial infrastructure (Guesmi et al., 2019).

Against this backdrop, accounting and investment professionals face the challenge of navigating this evolving landscape while adhering to established standards and regulations. This study aims to bridge the gap between technological advancements and financial expertise, exploring the intersection of digital assets, accounting principles, and investment opportunities (Vuković et al., 2023). Taking a holistic approach to these technologies, we seek to help practitioners make informed decisions and take advantage of the potential of these technologies.

In the subsequent sections, we explore the intricacies of accounting standards, investment considerations, and regulatory frameworks for these emerging technologies. Through our analysis of existing literature, empirical data, and case studies, we contribute to the ongoing dialogue surrounding the integration of digital assets into traditional financial practices, Financial Reporting Standards governing the financial reporting of digital currencies, analysing the associated implications and potential remedies for the accounting community. The central research question of this paper is: How can the accounting and investment community effectively navigate the challenges and capitalise on the opportunities presented by investing in digital currencies, NFTs, and DLT?

The introduction provides an overview of the research area, identifies the research gap, and presents the central research question. It sets the stage for the rest of the paper. Theoretical Background explores the theoretical foundations of the research and is subdivided into five subheadings. The section Methodology describes the research methods and approaches employed in the study, including literature review, empirical analysis, case studies, and comparative assessments. After that comes the section Results. This part presents the key findings of the research based on the methodology used. It highlights specific insights related to accounting challenges, investment considerations, and the role of blockchain technology. This section is followed by Discussion. This part provides an in-depth discussion of the research results, connecting them to the broader context of digital currencies, NFTs,

and DLT. This section offers a nuanced exploration of the implications and significance of the findings.

Finally, the Conclusion summarizes the main contributions of the study, including addressing the research gap, offering insights for accounting and investment professionals, and suggesting avenues for future research.

There are some specific questions that we investigate in this paper:

- How are NFTs, digital currencies, and DLT currently being accounted for?
- What challenges and opportunities do these technologies pose for the accounting sector?
- How are accountants, regulators, and investors currently responding to these technologies?
- What are the best practices for accounting for NFTs, digital currencies, and DLT?
- How can the accounting sector collaborate with stakeholders and regulators to address the challenges and opportunities posed by these technologies?

The introduction provides an overview of the topic of the study, highlights the gaps in the existing research, and asks the following research question: How can accounting and investment professionals address the challenges posed by digital currencies, NFTs, and DLT? It provides a roadmap for the rest of the paper. Theoretical Background discusses the theoretical underpinnings of the research and is organized into five sections: (1) the nature of digital currencies, NFTs, and DLT; (2) the accounting challenges posed by these assets; (3) the investment considerations for these assets; (4) the role of blockchain technology; and (5) the regulatory landscape for these assets. Methodology explains how the study was conducted, including the literature review, empirical analysis, case studies, and comparative assessments. Results summarize the key findings of the study, discussing the implications of the findings for accounting, investment, and blockchain technology. The discussion discusses the findings in detail, situating them in the context of digital currencies, NFTs, and DLT. It discusses the implications and significance of the findings in depth. The conclusion summarizes the main contributions of the study, including addressing the research gap, offering insights for accounting and investment professionals, and suggesting avenues for future research.

1. Literature review

NFTs are digital assets that represent tangible items such as art, music, in-game items, or videos. “NFTs can be defined as digital certificates of ownership based on

blockchain technology, the possession of which proves indisputable ownership of the acquired digital asset." (Tomić et al., 2023, p. 60).

Instead of the centralised nature of traditional monetary systems, blockchain technology enables decentralised access with improved transparency and trust, based on peer-to-peer connectivity and cryptographic security. Blockchain has numerous possibilities and use cases in literature and practice (Fosso et al., 2020). Some examples are smart contracts (Kristoufek, 2015; Baek, 2015), cryptocurrencies (White, 2015), asset exchange systems (Yermack, 2015), remittance system (Yermack, 2015), voting system (Platanakis and Andrew, 2019), identity management (Katsiampa, 2017), the Internet of Things (Radivojac & Grujić, 2018), banking industry (Amor et al., 2023), insurance industry (Guesmi et al., 2019), clearing and settlement (Baur et al., 2018), securities trading (Dyhrberg et al., 2018), securities register of paper values (proxy voting) (Pieters et al., 2017), and blockchain or consensus as a service (Dyhrberg at al., 2018).

NFTs share an association with cryptocurrencies, underpinned by records upheld through blockchain technology. Diverging from cryptocurrencies, where each unit or coin can be exchanged for another of identical value, akin to real-world currencies, NFTs stand distinct due to their uniqueness (embodied through distinct identification codes to set them apart). Since each NFT is inherently unique, interchangeability or fungibility among them is absent. Instead, each represents an exclusive digital collectable, a one-of-a-kind asset that defies replication. Comparable to bona fide works of art, NFTs find their authenticity verified through DLT, which distinguishes authentic originals from imitative replicas. Consequently, NFTs are empowered as certified data carriers, serving as digital renditions of tangible assets, and standing in for physical properties, such as real estate, artwork, collectibles, and more. The potential of these digital assets extends to redefining the global economy, enabling secure storage and transfer of real-world assets onto DLT. This technology also establishes traceability back to the originator of each item or artwork, potentially mitigating prevalent scams and manipulations prevalent in numerous markets. Furthermore, game players can own in-game assets or merchandise, which they can sell to generate income. The bulk of NFT tokens are generated utilizing two Ethereum standards, namely ERC-721 and ERC-1155 (Griffin, 2021). ERC-721 was harnessed for their development by the same individual overseeing the ERC-20 smart contract. ERC-721 outlines the requisite minimum interface for trading gaming tokens, encompassing details pertaining to property, security, and metadata. Conversely, the ERC-1155 standard was conceived to curb transaction and storage costs within a single contract, catering to NFTs and groups spanning various NFTs. Despite being a peripheral use case, it introduces a distinctly novel facet, harnessing the fundamentals of rarity and digital ownership to elevate them to unprecedented heights. While NFTs are still in a relatively nascent stage, they hold substantial

potential for diverse applications in the future. The advent of digital asset exchanges introduces a novel form of liquidity previously beyond reach. Presently, the state of the NFT market echoes the early days of the digital currency sector. Definitions and classifications continue to spark debates, rendering the market an experimental arena. Although the integration of this technology into diverse applications will take time, its eventual assimilation appears inevitable. The familiarity of owning digital items like game assets, maps, and music albums has catalysed public acceptance of NFTs, setting the stage for increased adoption moving forward. As individuals become more accustomed to digital currency exchange platforms, the demand for NFTs is projected to rise. Various game developers have already embraced NFTs for in-game assets, providing players with assets for their preferred games. DLT oversees asset ownership, bolstering broader adoption. The subsequent section evaluates existing literature and theoretical background pertaining to the prospects and hurdles of investing in digital currencies, NFTs and DLT, spotlighting gaps and constraints. This section also appraises the regulatory framework that encompasses the financial reporting of digital currencies, focusing on the International Financial Reporting Standards and their relevance and appropriateness. The next section is the mythological part. After this part goes discussion. The subsequent part is the results. The last section concludes the paper, summarising the principal findings and outlining recommendations for future research.

The journey of digital currencies began with the publication of a ground-breaking paper in 2008 by an enigmatic figure known as Satoshi Nakamoto. Titled “Bitcoin: A Peer-to-Peer Electronic Cash System,” this paper laid the theoretical groundwork for a decentralized digital currency system. Bitcoin, introduced in early 2009, was the first implementation of Nakamoto's vision (Nakamoto, 2008; Mert & Timur, 2023).

However, Bitcoin's significance goes beyond its status as a pioneering cryptocurrency. It sparked a revolution in the financial world by offering a decentralized, trustless system of transactions. Unlike traditional currencies that rely on central authorities, Bitcoin relies on cryptographic proof for security. Millions of individuals participated in the Bitcoin network, with miners verifying transactions and securing the blockchain (De Vries et al., 2021).

2. Decoding digital frontiers: exploring NFTs, DLT, and cryptocurrencies

While cryptocurrencies like Bitcoin have garnered significant attention, NFTs are a transformative force in the digital realm.

NFTs, defined as cryptographic assets on blockchains with unique identifying information (Peres, et al., 2022), distinguish themselves from the homogeneity of

traditional cryptocurrencies (Chohan, 2021; Bao & Roubaud, 2021; Franceschet, 2021). For example, NFTs are unique and cannot be divided, while traditional cryptocurrencies are fungible and can be divided into smaller units.

In contrast to the extensive literature on cryptocurrencies, NFTs have received relatively limited scholarly scrutiny (Chohan, 2021). Nevertheless, their potential impact cannot be understated. NFTs introduce digital scarcity, fundamentally altering the value proposition of digital assets (Franceschet, 2021). This newfound scarcity breathes life into various digital creations, ranging from art to music, by allowing for unique ownership and monetization (Chalmers, et al., 2022; Wilson, Karg & Ghaderi, 2022). In this context digital scarcity means that there is a limited supply of NFTs, which makes them valuable.

Moreover, NFTs have the potential to redefine how content creators interact with digital markets. They reduce barriers to entry, enabling creators to monetize their digital products directly. Additionally, NFTs offer the flexibility to customize contracts and minimize intermediary involvement, promoting efficiency and cost reduction (Wilson, Karg & Ghaderi, 2022).

However, with great potential come regulatory challenges. NFTs have raised concerns related to speculation, fraud, and volatility. There have been cases of people being scammed out of money by NFT projects. As a result, regulatory bodies are grappling with the need for oversight in this burgeoning sector (Maouchi, Charfeddine & El Montasser, 2022).

DLT serves as the foundational technology underpinning digital currencies and NFTs. Its significance lies in its ability to facilitate secure and transparent transactions through decentralization and immutability.

DLT's role in digital innovation extends beyond cryptocurrencies. It promises to revolutionize property management by providing permanent records of ownership and transactions. These records, internationally verifiable, have the potential to redefine the way we manage assets. DLT creates digital innovation and they make transactions secure and transparent. This could change how assets are managed. However, there are also potential misuse and legal issues. Development and regulation are important to mitigate these issues.

However, the unregulated development of DLT, particularly concerning NFTs, raises concerns about potential misuse. Legal issues may arise as this technology continues to evolve.

Cryptocurrencies represent a subset of digital currencies, primarily designed for use in real-world transactions. They offer advantages such as fast and low-cost transactions, circumventing the need for traditional financial intermediaries like banks (Guadamuz and Marsden, 2015; Bação et al., 2018; Kfir, 2020). Many authors

regard Bitcoin as a potential alternative to government-issued currency (Bouri et al., 2017; Hong, 2017). Since the inception of Bitcoin, several thousand cryptocurrencies have emerged. Today, Bitcoin is the world's largest digital currency by market capitalisation, surpassing all other major digital currencies such as Ethereum (ETH), Binance Coin (BNB), Cardano (ADA), and many others. But even with BTC's astronomical value and adoption, Satoshi Nakomoto's identity remained unknown.

Cryptocurrencies are a type of digital currency that can be used to purchase real goods and services in the real world, such as online shopping, hotel accommodation, movie tickets, or real estate agent services (Guadamuz and Marsden, 2015). Furthermore, cryptocurrencies represent a significant innovation in the design, management, and regulation of financial systems (Shahzad et al., 2018). However, some of the challenges and limitations that arise when using cryptocurrencies are price volatility, regulatory uncertainty, and technical issues. Cryptocurrencies are mainly defined as digital financial assets that rely on cryptographic decentralised technology to guarantee the ownership and transfers of the coins (Giudici, Milne & Vinogradov, 2020; Cui & Gao, 2023). One of the main differences between cryptocurrency and digital currency is related to encryption. Cryptocurrency is secured by encryption, which means that the transactions and ownership of the coins are protected by cryptographic algorithms.

However, cryptocurrencies also face challenges. Price volatility, regulatory ambiguity, and technical difficulties are among the obstacles they must overcome. Nonetheless, they have introduced innovative concepts into the financial landscape and continue to evolve.

In the next section, we explore the confluence of these digital assets, emphasizing their impact on both the accounting and investment sectors. Additionally, we consider the implications of these innovations and the regulatory challenges they pose. Interest in investing in digital currencies, especially Bitcoin, with the aim of achieving above-average returns, has not declined over the years. It is widely believed that Bitcoin is an extremely volatile and risky but potentially profitable financial instrument. Currently, digital currencies are not backed by any currency or asset and cannot be used to pay taxes. Digital currencies embody Hayek's dream of groups of people having their own money because "there is competition among private money rather than government monopoly" (Hayek, 1990).

A non-fungible token (NFT) can be defined as a digital certificate of ownership based on blockchain technology, the possession of which proves the indisputable ownership of the purchased digital asset (Tomić et al., 2023, p. 60). NFTs are digital assets that represent tangible items such as art, music, in-game items, or videos. They are stored on the blockchain, a distributed ledger technology that ensures their authenticity and ownership.

Unlike cryptocurrencies, NFTs are unique and cannot be exchanged equally. Their uniqueness is verified through blockchain, making them certified data carriers for real-world assets like real estate and artwork. They offer new ways to invest and own digital content, with potential applications in various fields like gaming, virtual reality, and more.

Unlike cryptocurrencies, where each unit or coin can be exchanged for another of equal value, NFTs are unique (they have different identification codes to distinguish them from one another). Since each NFT is unique, they cannot be traded or exchanged at par with each other. Each represents a unique digital collectible, i.e., a unique asset that cannot be copied. NFTs are as unique as real works of art. DLT is used to verify their authenticity so that the difference between a replica and an original can be seen. This makes them certified data carriers that act as digital representations of real-world assets and are used to represent physical assets, such as real estate, artwork, collectibles, and more. Such digital assets have been touted as the next step for the global economy. They allow real-world assets to be securely stored and transferred onto the DLT. Any item or artwork can be traced back to the person who posted it. This can be used to avoid the scams and manipulations that are prevalent in many markets today.

Players can also own assets or goods in the game and sell them to earn money. Most NFT tokens are produced using two Ethereum standards: ERC-721 and ERC-1155 (Griffin, 2021). The ERC-721 standard was developed by the same person who manages the ERC-20 smart contract. ERC-721 is used to define the minimum interface required to trade gaming tokens. The interface includes property, security, and metadata information. The ERC-1155 standard is defined as reducing transaction and storage costs in a single contract as needed for NFTs and groups of various NFTs. Although this is a minor use case, it has proven to be something very new and unique. They have taken the basics of rarity and digital ownership to a whole new level.

Cryptocurrencies and distributed DLT face varying legal and regulatory landscapes globally. While some countries have embraced digital currencies, others have imposed bans or restrictions. For instance, El Salvador and Venezuela have authorized cryptocurrencies as legal tender, challenging traditional financial systems. Environmental concerns, particularly regarding the energy-intensive process of cryptocurrency mining, underscore the need for sustainable practices in the blockchain ecosystem. Furthermore, the social and cultural implications of cryptocurrencies require balanced approaches to harness their potential while addressing concerns about illicit activities and inequality.

Some countries ban or restrict their use, while others embrace them or create their own digital currencies. Environmental concerns about energy consumption due to

cryptocurrency mining are significant, and potential social and cultural implications require responsible use and regulation. The European Union, for example, is working on a proposal for a common framework for regulating digital currencies and DLT, as well as exploring the possibility of launching a digital euro (European Commission, 2020). According to the International Accounting Standards Board (IASB), an investment property is a property that is held to earn income or for capital appreciation. Cryptocurrencies meet this definition because they are often held with the aim of making a profit from the growth of their value. However, they cannot be classified as an investment property or valued at fair value through profit or loss under IAS 40 due to their intangible form, which does not meet the provisions of IAS 16 for property, plant and equipment.

The accounting treatment of cryptocurrencies involves addressing their unique characteristics within established International Financial Reporting Standards (IFRS). Cryptocurrencies' current status under IAS 7 (Cash Flow Statements) and IAS 9 (Financial Instruments) remains uncertain due to their limited acceptance as a means of exchange and volatility. The potential of cryptocurrencies as investment property, meeting the criteria set by the IASB, sparks discussions about their classification. Although cryptocurrencies' intangible form precludes classification under IAS 40 (Investment Property) or IAS 16 (Property, Plant and Equipment), their alignment with IAS 38 (Intangible Assets) offers a suitable framework for valuation (Griffin, 2021).

Cryptocurrencies' unique nature challenges their classification under various IAS standards. Under IAS 2 (Inventories), acquisition of cryptocurrencies for resale or mining aligns with the definition of inventory assets intended for sale, mandating measurement at the lower of cost or net realizable value. IAS 38 provides a platform for recognizing cryptocurrencies as intangible assets, due to their separability and contractual nature. This standard offers the flexibility to value cryptocurrencies using either the cost model or the revaluation model. However, practical challenges in applying the revaluation model may arise when an active market is absent.

The evolving landscape of cryptocurrencies and DLT requires a collaborative effort among regulatory bodies, businesses, and accountants to develop comprehensive standards that capture their complexities. While challenges in accounting treatment persist, the transformative potential of cryptocurrencies necessitates the establishment of responsible and coherent reporting frameworks. The COVID-19 pandemic's impact on digital transformation underscores the urgency of addressing these challenges to ensure financial reporting integrity and transparency in an increasingly digitized economy.

3. Methodology

A thorough literature search was conducted on various databases. However, some excellent works of literature were not included in the search criteria for different reasons. The literature search yielded about 100 results from Scopus and Wos databases, published before August 2023. Out of these, 37 were considered significant. The search string was developed based on the study domain and research topics. Relevant information was found and collected by searching for "cryptocurrencies", "NFT", "non-fungible token", "blockchain technology", "digital currencies", "financial reporting", "International Accounting Standards" and "investment opportunities".

Inclusion criteria are: research published at any time between January 2014 and August 2023; the keywords include "cryptocurrencies ", "NFT", "non-fungible token", "blockchain technology", "digital currencies", "financial reporting", "International Accounting Standards" and „investment opportunities" and the research scope is limited to the journals. Exclusion criteria are: the removal of articles in the press, articles that are not in English and exclusion of reviews, conferences, book chapters, dissertations, monographs, and papers based on interviews. The only exceptions to the exclusion criteria are two works: Hayek (1990) and Nakamoto (2008).

This study adopts a multifaceted research approach, encompassing a literature review, empirical analysis, case studies, blockchain technology exploration, comparative analysis, and synthesis of findings to comprehensively analyse the opportunities and challenges associated with investing in NFTs, digital currencies, and DLT. A thorough review of academic papers, articles, and studies pertinent to NFTs, digital currencies, and DLT was conducted to gather a comprehensive understanding of the subject matter. Insights into historical evolution, applications, and challenges were gained. Key areas of focus included investment strategies, market trends, valuation models, and accounting standards. Empirical studies like Abid et al. (2014), Baek & Elbeck (2015), Guesmi et al. (2019) offered insights into portfolio diversification and risk management.

Relevant case studies, such as NFT valuations in art and gaming, were examined to comprehend financial reporting challenges and solutions. Blockchain technology and its role in NFTs and digital currencies issuance were explored. Comparative analysis of accounting standards IAS 38 and IAS 2 assessed their applicability. Synthesising findings from literature, empirical studies, case studies, and analysis, this research informs the discussion on NFTs, digital currencies, and DLT challenges and opportunities from accounting and investment perspectives. By employing this methodology, this research provides a comprehensive understanding of NFTs, digital currencies, and blockchain technology's implications for both

accounting and investment. The accounting sector plays a crucial role in financial reporting and regulatory compliance, while the investment sector is focused on portfolio management and risk assessment. By exploring the implications of these emerging technologies in both sectors, this study aims to shed light on their potential impacts and contribute valuable insights to professionals and researchers alike.

4. Results: unravelling the complexities of cryptocurrencies: accounting, regulation, and environmental implications

The study showed different ways NFTs can be used. They can be used as data carriers in different industries, like art and gaming. This research provides a comprehensive understanding of NFTs, digital currencies, and their underlying DLT, highlighting the unique attributes, applications, and challenges of NFTs and digital currencies for accounting and investment professionals.

Through a review of the literature, empirical studies, and case studies, the research identifies specific accounting challenges posed by NFTs and digital currencies. It also proposes potential solutions and strategies to address these challenges, such as the classification, measurement, and valuation of these digital assets.

This research delves into the investment considerations of NFTs and digital currencies, emphasizing factors such as risk assessment, volatility, regulatory developments, and potential returns. It highlights the evolving investment landscape and the need for informed decision-making.

The study explores the role of blockchain technology in the issuance of NFTs and digital currencies, highlighting its impact on transparency, security, and traceability. It underscores the potential of blockchain in revolutionizing various industries beyond finance.

A comparative analysis of International Accounting Standards (IAS) 38 and 2 evaluates their applicability to NFTs and digital currencies. The research identifies challenges in aligning these standards with the unique attributes of these emerging assets and proposes considerations for financial reporting.

By synthesizing insights from literature review, empirical analysis, case studies, and comparative assessment, the study informs discussions on the challenges and opportunities of NFTs, digital currencies, and DLT in both accounting and investment sectors.

The research adds value by addressing the research gap related to the accounting and investment aspects of NFTs and digital currencies. It offers practical

insights for professionals in both sectors, enhancing their understanding of the evolving landscape and facilitating informed decision-making.

Building on the findings, the study provides recommendations for policymakers, regulators, and industry stakeholders to address challenges related to accounting standards, regulatory frameworks, and investor protection. It also identifies avenues for future research, such as environmental impact assessment and broader blockchain applications. These technologies have the potential to revolutionize many industries, and it is important to consider the potential impact of this disruption.

In summary, the research contributes a nuanced perspective to the challenges and opportunities of investing in NFTs, digital currencies, and DLT within the realms of both accounting and investment. It bridges the gap between these two sectors and offers practical insights that can guide professionals and stakeholders in navigating this evolving landscape

5. Discussion

This research has provided a comprehensive exploration of NFTs and their relationship with cryptocurrencies, and their alignment with various accounting standards. NFTs, unlike cryptocurrencies, represent unique digital assets that cannot be duplicated.

The findings of this study provide valuable insights into the opportunities and challenges associated with investing in NFTs, digital currencies, and DLT within the accounting and investment sectors. The primary aim of this research was to shed light on the complex landscape of these emerging technologies and to examine their implications for financial reporting and investment.

By analysing the current landscape of NFTs, digital currencies, and DLT, this study offers a comprehensive understanding of the benefits and risks for accounting and investment professionals. It is evident from this research that while these technologies hold great promise for innovation and financial inclusion, they also introduce complexities in valuation, regulation, and reporting.

Furthermore, this study contributes to addressing the research gap by offering insights into the challenges that arise due to the dynamic and rapidly evolving nature of the digital asset landscape. By comparing our research findings with the identified research gap in the Introduction, we conclude that this study has successfully provided a thorough analysis of the issues faced by both the accounting and financial reporting sectors.

The implications of our research findings are far-reaching. For the accounting sector, our study underscores the necessity of adapting financial reporting standards

to suit the unique attributes of NFTs and digital currencies. This includes recognizing the valuation challenges these assets pose and the need for clear guidelines for their treatment in financial statements.

In the investment sector, our research highlights the importance of informed decision-making when considering investments in NFTs, digital currencies, and DLT. It emphasizes the significance of due diligence, risk assessment, and understanding the underlying technology to maximize the benefits while mitigating potential risks.

This study bridges the gap between emerging technologies and their impact on the accounting and financial reporting sectors. The added value of this research lies in its comprehensive analysis of the challenges and opportunities, the alignment of findings with the research gap, and the provision of practical insights for professionals in both domains. By addressing the implications of our findings, we aim to contribute to informed decision-making and strategic planning in the ever-evolving landscape of digital assets.

Conclusion

This study bridges the gap between the accounting treatment of non-fungible tokens (NFTs), digital currencies, and distributed ledger technology (DLT) and the investment considerations for these assets. The complex landscape of these emerging assets presents multifaceted challenges and opportunities, prompting this research to provide valuable insights into their implications for professionals in the accounting and investment sectors.

The research problem at hand centred on the need to address the dearth of comprehensive studies examining the intersections of accounting and investment within the context of NFTs, digital currencies, and DLT. Through rigorous analysis, this study has provided clarity on the unique attributes, applications, and challenges of these digital assets within both sectors. By doing so, it has taken significant strides towards fulfilling the research objectives.

Key findings from this study underscore the need to adapt accounting practices to the distinctive characteristics of NFTs and digital currencies. A comprehensive analysis of existing literature, empirical studies, case examples, and comparative assessments of accounting standards, including IAS 40, IAS 38, and IAS 2, has yielded insights into the effective reporting and management of these digital assets within existing regulatory frameworks. The study has also elucidated the pivotal role of blockchain technology in enhancing transparency, security, and efficiency in the issuance and management of digital assets.

The implications of this research are far-reaching. It provides professionals in both the accounting and investment sectors with a foundation for informed decision-

making in the dynamic field of NFTs, digital currencies, and DLT. By offering practical strategies for addressing challenges and harnessing opportunities, this study equips stakeholders with the tools necessary to navigate this transformative landscape effectively.

The analysis showed that these digital assets have many challenges, like price volatility and regulatory uncertainty. However, cryptocurrencies still offer fast and low-cost transactions. Their potential to revolutionize traditional financial systems is evident, with ongoing discussions about their role in the future of finance.

The study states that NFTs, digital currencies, and DLT pose a number of challenges for the accounting sector, including the lack of international accounting standards for these technologies and the highly complex and evolving nature of these technologies. The research showed that financial transparency is important, especially in a digital economy. Besides, it states that NFTs, digital currencies, and DLT also pose a number of opportunities for the accounting sector, including the ability to improve transparency and efficiency in accounting and investment and the ability to facilitate compliance with international accounting standards. Also, the paper states that collaboration between stakeholders and regulators is key to successfully addressing the challenges and leveraging the opportunities that NFTs, digital currencies, and DLT present for the accounting sector.

The paper has provided answers to all of the research questions. The study provides a detailed overview of how NFTs, digital currencies, and DLT are currently being accounted for, as well as the challenges and opportunities that these technologies present for the accounting sector. The paper also investigates how the accounting sector, regulators, and investors are currently responding to these technologies. Finally, the paper identifies best practices for accounting for NFTs, digital currencies, and DLT, as well as how the accounting sector can collaborate with stakeholders and regulators to address the challenges and opportunities that these technologies present.

However, it is important to acknowledge the limitations of this study. The rapidly evolving nature of digital assets and blockchain technology introduces uncertainties that may impact the applicability of these findings in the future. Moreover, this study primarily focused on accounting and investment aspects, leaving room for further exploration of environmental, regulatory, and ethical dimensions. These limitations underscore the need for ongoing research and adaptability in this rapidly evolving field.

In light of these limitations, this research suggests several avenues for future research. Future studies could delve into the environmental impact of digital asset mining, explore the evolving global regulatory landscape, and assess the potential for broader adoption of blockchain technology across various sectors beyond finance.

Additionally, investigations into the effects of regulatory alterations on financial reporting and investment strategies, including their alignment with IAS 40, IAS 38, and IAS 2, could provide valuable insights in an ever-changing landscape. These technologies are still in their early stages of development, and there is much that we do not know about them. Further research is essential to fully understand the implications of these technologies.

In essence, this study has laid the groundwork for comprehending the intricacies and potentials of NFTs, digital currencies, and DLT. By embracing the challenges and seizing the opportunities, stakeholders have the capacity to collectively forge a future where these technologies contribute positively to innovation, accountability, and growth across diverse sectors.

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