BLOCKCHAIN ACCOUNTING FOR CRYPTOCURRENCY

Abstract

The scope of blockchain technology, originally linked to the cryptocurrency Bitcoin, has expanded significantly because of its numerous applications across various fields. In the realm of accounting, its primary value lies in its ability to mitigate risks and the potential for fraud, eliminate human errors, enhance efficiency, and boost transparency and reliability. The objective is to explore current trends and emerging research areas worldwide related to blockchain technology for secure accounting management. Cryptocurrencies serve as an alternative means of exchange, prioritizing security, transparency, and cost-effectiveness. While cryptocurrencies exhibit characteristics similar to traditional money, they do not entirely align with the economic attributes of conventional currencies due to their significant price volatility. This study delves into blockchain accounting for cryptocurrencies, with the key implication being that cryptocurrencies should be regarded as a form of currency rather than a speculative instrument.

Keywords: Blockchain technology; accounting; management; security Cryptocurrencies; Cryptographic Techniques.

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I. INTRODUCTION

In recent years, there has been a significant surge in global and interdisciplinary interest in Blockchain (BC) technology, largely attributable to its adoption by Bitcoin in 2008 (Jalan et al., 2023). Blockchain, in essence, refers to a sequence of interconnected data blocks, akin to pages in a digital ledger system, which are digitally signed within the internet environment to facilitate digital payment transactions using cryptocurrencies. At its core, BC signifies an open system for information and accounting, enabling the supervision and validation of payment transactions with the unique characteristic of decentralization, thus preventing the duplication or digital replication of currencies. Its potential for widespread adoption is substantial, given its cost-effectiveness, ease of access, and high-level security, all of which are revolutionizing the approach to recording private transactions. The utilization of cryptographic techniques and encryption protocols for transaction identification and verification (Kaal & Calcaterra, 2017) ensures transparent details of cryptocurrency transactions while preserving user anonymity. Pricing in these transactions is determined by supply and demand dynamics, and the distinctive features of cryptocurrencies have led to their popularity among a broader community. However, it's worth noting that Indonesia's monetary policy currently restricts the use of mediums of exchange other than fiat currency for trading and payments, including cryptocurrencies (Handayani et al., 2023). Furthermore, cryptocurrencies can be considered as tradable commodities on Futures Exchanges through the use of permitted distributed ledger technology, a decentralized system that upholds ledger integrity according to the established protocol (Handayani et al., 2023). It is important to acknowledge that due to negative publicity, speculative concerns, and other associated risks, particularly in the case of Bitcoin, it is often viewed as an investment rather than a conventional currency (Haykir & Yagli et al., 2022).

II. METHODS

The method that we used in this paper is a literature studyfrom any kind of relevant source of information, such as books, journals, and articles from a validated site. Like google scholars, emerald publishing, researchgate, and etc. Thereason choose literature study as our method of researching this paper is because in this paper to look for the digital culture to unlocking finance transformation intitutionthat just by doing reading we can come up with a solid conclusion that not only believeable but also validateable.

III. RESULTS AND DISCUSSION

1. **Blockchain:** Ian Grigg, a scholar, created what is perhaps the first use of BC in accounting in 2005. In this research, he suggests triple-entry accounting, which integrates value units (tokens) into a third information entry that is registered on the network via the encrypted BC. This approach is based on distributed ledger technology (DLT). These tokens can be used to represent any accounting fact, right, obligation, or good in addition to cryptocurrency.In this way, the accounting model may be expanded to a larger scope of information, faster access to it, more security, and for the public administration, it would be an instrument towards openness if accounting can be performed utilizing BC technology.Through the use of a cryptographic digital signature and distributed, irreversible, and verified databases on the network, the BC increases the transparency and dependability of the accounting information and the veracity of the facts. This situation is

particularly significant for the annual account audit since smart contract execution enables process automation.

Artificial intelligence (AI) and Big Data (BC) are transforming accounting processes and features of control and verification in the context of the accounting digitization. The accounting system relies on manual control procedures that can necessitate duplication of work, such reconciliation. To put it succinctly, distributed ledger technology eliminates control and reconciliation actions between the organizations. Additionally, by doing away with intermediaries, the system becomes more efficient while saving money and time. The primary theme axes that have been established in the study of BC technology for secure accounting management, together with the identification of new ones.Therefore, the primary goal is to review the existing and developing research topics on BC technology for secure accounting management at the global level between 2016 and 2020, that is, from the release of the first article in 2016 to the final full year (2020). Mathematical and statistical techniques were applied to a sample consisting of 1130 articles chosen from Elsevier's Scopus database in order to derive appropriate judgments and findings. The significance of these statistical analyses and mathematical techniques lies in their ability to produce trustworthy quality indicators. It entails gathering data from the publications made available by the main players, i.e., with increased scientific output of a certain field of study.The findings obtained from this work are helpful for the actors working on this research topic because they call for an analysis of previous research and an approach to the emerging, such as academics, researchers, research institutions, universities, investment planners, or BC developers. This adds to the body of knowledge on BC technology for secure accounting management.

2. **Blockchain in Education** A Revolutionary EvolutionPublicblockchains and ledgers whose licenses can be applied successfully in many ways toeducation and learning. some of the advantages offered and compared to(DDBMS) Distributed Database Management System which has been the backboneprevious educational technology infrastructure. The thing that stands out the most from the differencebetween distributed ledgers and DDBMS is the inability of allowed ledger records. byensure the aspect that all the abilities that the ledger claims that students acquire frompublisher actually assigned to it. This means no middlemenrequired to verify the authenticity of the credentials after being notified. Existenceledgers and blockchain can transform education more globally and provide opportunitiesfor small badge providers to easily expand their digital expertise and thus compete withestablished educational institutions. Even these changes cannot revolutionize learning. Onalone, the underlying technology of licensed blockchain cannot guarantee progressof a high-quality educational content management system. The distributed ledger must havecommon language to describe their notes, more than just publishing and recording.

3. **Cryptocurrencies from an Economic Point of Views**

- **Cryptocurrency as a Currency?**

The value of a cryptocurrency is not determined by an independent standard but relies on the value of a fiat currency to establish its worth, and yet, cryptocurrencies can still function as a medium of exchange (Mushaddik et al., 2023). In terms of legal tender, the government designates something as legal tender, and it

must be issued by the central authority (Santaolalla Montoya, 2023). Bitcoin is software that can be freely downloaded. It is not a project driven solely by the capitalist principle of profit maximization, even though many Bitcoin holders have indeed profited from buying it at an initially low price (Kalinov & Voshmgir, 2017). No commercial legal entity is responsible for creating Bitcoin, and neither its founder, Mr. Nakamoto, nor other programmers or entrepreneurs claim ownership of the blockchain, limiting its usage solely to those engaging in transactions.

Bitcoin operates on a "token-based" monetary system, wherein currency is directly exchanged for goods, services, and assets, as opposed to a "credit-based" money system that relies on an asset-liability structure underpinning individual accounts. To be classified as "money," an asset must fulfill its functions of (i) facilitating average payments, (ii) serving as units of account, and (iii) acting as a store of value (Weber & Staples, 2022).

Bitcoin's role as a means of payment remains distinct from replacing fiat money's dominance, as it lacks the legal tender status. The Bitcoin market still lacks sufficient density, and the high price of Bitcoin hinders its suitability for retail transactions, incurring substantial costs (Weber & Staples, 2022).

When considering Bitcoin as a unit of account, pricing retail goods in Bitcoin often involves dealing with large numbers of decimal places, making it challenging for consumers to compare prices across various products and services (Komalavalli et al., 2020).

Regarding its function as a store of value, the significant price volatility of Bitcoin presents a barrier to its use as a stable store of value, particularly for current purposes (Weber & Staples, 2022).

- **Crypto Speculative:** The paradox surrounding the emergence of Bitcoin lies in the fact that it started as an intrinsically worthless computer entry but has experienced a significant price surge in recent years. British economist John Maynard Keynes identified three primary motives driving the demand for money: transactions, precautionary, and speculative motives. Consequently, the increased demand and price of Bitcoin can be attributed to the "transaction motive" and speculative demand as an asset. The interpretation of price bubbles, such as those seen in Bitcoin, often revolves around overly optimistic and euphoric expectations and can impact various assets like stocks, real estate, gold, art, land, foreign exchange, oil, and metals (Bonaparte, et al., 2022).

  Price bubbles can manifest in various contexts, including the discovery of valuable natural resources, the emergence of new export markets, advancements in technology or transportation, and the innovation of distributed ledger technology. Apart from their intriguing financial aspects, the emergence and subsequent collapse of bubbles carry significant real-world consequences. They inflate asset prices beyond their fundamental values, leading to excessive investment in activities experiencing temporary highs. Bubbles often result in the misallocation of resources in the economy on the supply side and create a wealth effect on the demand side, prompting

increased consumption and accumulating debt that can become unsustainable over time. The crypto bubbles appear to be the latest example of this dynamic.

- **Cryptocurrency Risks and Opportunities:** Utilizing cryptographic techniques and distributed ledgers, cryptocurrency has emerged as a popular medium of exchange, renowned for its security, transparency, and cost-efficiency (Hellwig & Huchzermeier, 2022). However, these core attributes are intrinsically linked to user activities, which sometimes involve illicit transactions, primarily because cryptocurrency operates outside the purview of a central authority, rendering it unrecognized in legal terms. Here are some of the opportunities and risks associated with cryptocurrency:

  - **Opportunities:** a. It has the potential to enhance global financial efficiency by reducing transaction costs and enabling peer-to-peer exchanges. b. In the long run, this technology could expand financial inclusion by providing secure and low-cost payment options. c. The implications extend to the financial market infrastructure, promoting security and expediting transaction settlement processes.

  - **Risks:** a. Cryptocurrency may be susceptible to misuse for illicit activities. b. There is a risk to financial stability due to the lack of asset backing. c. Consumer protection is limited, as there is no central authority overseeing cryptocurrency transactions.

IV. CONCLUSION

Blockchain is a digital data storage system that contains records that are linked via cryptograpy.Blockchain technology is now used by various sectors, one of which is for online transactionscryptocurrencies like Bitcoin. Cryptocurrencies, especially bitcoin, which are used in this discussion can be accepted as money, when viewed from the nature ofmoney. Cryptocurrencies have the same characteristics as fiat currencies that meet six out of sevencondition; both have no intrinsic value. The seven conditions for the nature of money are to have intrinsic value, run outdivided, homogeneous, durable, mobile, rare and stable value. Cryptocurrencies do not fully meet the threecharacteristics of a successful currency from an economic point of view, this is because of its high price volatility.Cryptocurrencies have not yet fully carried out their functions as a medium of exchange, unit of account, and storageMark. Future studies are expected to follow and bridge some of the conflicts foundand findings about negative publicity and use of cryptocurrencies in particular bitcoin, can be consideredbe the main thing on the agenda for the future. The examination of these studies provides a research agenda to ensureimportant contribution and can measure understanding of the conditions that occur.

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