



THE OPPORTUNITIES AND CHALLENGES OF CRYPTOCURRENCIES: A SYSTEMATIC REVIEW

Mohammad Khalid Khawrin

Ph.d. Scholar, Gujarat University
Email: mk.ahmadzai@yahoo.com / mk.ahmadzai786@gmail.com
Phone: +919081065297
<https://orcid.org/0000-0003-3313-2061>

Dawit Negussie Tolossa

Ph.d. Scholar, Gujarat University
School of commerce
Email: dawitnegus@gmail.com
Phone: 918347757465
<https://orcid.org/0000-0001-7551-1700>

ABSTRACT

Cryptocurrencies have taken center stage in the financial sector of the globe. A cryptocurrency is a form of digital and virtual currency that is secured and encrypted by blockchain and cryptography technologies. A new type of global investment in cryptocurrencies. Even though, this new virtual decentralized has benefits and harms. A PRIMA method was applied to collect data from search engines. Data were analyzed through Atlas.ti for finding the themes to answer the objectives. The result shows six challenges via Complex and changeable activities, crimes, crypto expenses, illegal activities, the need for specialization, and others that can be controlled and hacked. Moreover, seven themes for opportunities such as cryptocurrency transactions, decentralization, new academic topics, new industry, new monetary system, new money type, and new technological control are presented.

Keywords: Cryptocurrency, Opportunities, Challenges, Decentralization,

INTRODUCTION

Initial Coin Offerings (ICO), a method of funding early-stage digital innovations through the issue of crypto-assets, are a financing option that has been acquiring significant relevance (Aysan & Kayani, 2022). Although the cryptocurrency market has a lot of potential, its largely decentralized structure also presents risks. Cryptocurrency is a high-risk investment due to the lack of a regulatory body to monitor and control the operations connected with such digital transactions (Andrés et al., 2022). Furthermore, The adoption of cryptocurrencies and blockchain systems in both emerging and established economies is influenced by several developmental challenges (Bhimani et al., 2022). The future of cryptocurrencies is difficult to foresee because there is still much work to be done, particularly in the area of official rules (Bunjaku et al., 2017). As a brand-new worldwide investment asset, cryptocurrencies have arisen (Qureshi et al., 2020).

LITERATURE REVIEW

The cryptocurrency makes use of Blockchain technology, a peer-to-peer network's decentralized ledger of all transactions. Participants can opt to prioritize their transactions using this technology based on their rising technological popularity (Morton et al., 2018). The existence of cryptocurrencies in the market and their rising popularity among global citizens. According to the Oxford Dictionary, cryptocurrency is a digital currency that operates without a central bank and uses encryption techniques to control how money is created and transferred (Banwari, 2017). A cryptocurrency is a digital or virtual currency that employs cryptography for protection. A cryptocurrency's biological character, which distinguishes it from other forms of money and may be its most alluring quality, makes it potentially impervious to intervention from or manipulation by governments. Digital currency is more akin to electronic money because it is mostly supported and governed by the Central Bank. Contrarily, virtual currency is ungoverned and decentralized (Bunjaku et al., 2017). With the introduction of cryptocurrencies, the financial sector is on the cusp of cutting-edge technology, and people are observing a steadily rising trend of investments in alternative methods. Although cryptocurrency exchanges are rapidly expanding,



investing in cryptocurrencies comes with its own set of difficulties and hazards (Bandyopadhyay, 2021). "Blockchain: Blueprint for a New Economy", Swan (2015), and Sas & Khairuddin (2019) Every block in the blockchain structure is connected to the one before it, called the "parent block," and is produced by a cryptographic hash algorithm. The blockchain structure is based on a collection of transactions maintained in a publicly available database. Since a block cannot be changed or altered, the hash sequence links the blocks together to form the chain and provides blockchain security. Existing nodes always have a local copy of the whole blockchain, including "the genesis block" (the first block of the blockchain), on hand. Every block in the Blockchain structure is connected to the one before it, called the "parent block," and is produced by a cryptographic hash algorithm. The Blockchain structure is based on a collection of transactions maintained in a publicly available database. Since a block cannot be changed or altered, the hash sequence links the blocks together to form the chain and provides blockchain security. Existing nodes always have a local copy of the whole blockchain, including "the genesis block" (the first block from the blockchain), on hand (Shrimali & Patel, 2021).

Furthermore, because of the strategic consequences of adopting blockchain, there will be a need to build the organizational infrastructure to deal with it from the ground up. As a result, this technology will need to be adopted progressively in the business environment. On the other hand, because people are the main stakeholders in any firm, they must support the blockchain architecture. The novelty of the technology necessitates consistent efforts to get a proper grasp of the benefits in terms of costs and value produced by blockchain technology to transform the economy. Consumers' reactions to blockchain technology create a framework for enterprises to manage their capacities, suggest legislation that should be implemented to ease the transition, and reveal targeted solutions for the technology's acknowledged limits (Sas & Khairuddin, 2019).

THE CRYPTOCURRENCIES OPPORTUNITIES

Cryptocurrency seems to have moved past the early adoption phase that many new technologies go through (Thomas et al., 2021). The market for cryptocurrencies has experienced explosive growth over the years, particularly in India, where many young people choose to invest in this product. Bitcoin and other cryptocurrencies' values have continually soared, providing investors with unexpected rewards. However, Bandyopadhyay (2021) cryptography, trust, decentralization, and transparency are among the technical qualities that provide cryptocurrencies with a number of benefits that may be turned into real prospects (Sas & Khairuddin, 2019).

THE CRYPTOCURRENCIES CHALLENGE

With cryptocurrency, there is always a danger, such as unexpected price increases and significant losses. For instance, Bitcoin reached its peak value in April 2021 and then fell by more than 50% the following month, reaching a 4-month low. Ether also dropped 57 percent of its value in a single week in May 2021, which was the most since January 2021 (Wilkes et al, 2021). Bandyopadhyay (2021) Government participation continues to be a contentious issue, raising the difficulty of upholding the idea of freedom as it relates to combating terrorism, the supply of narcotics, or money laundering. Sas & Khairuddin (2019) although it appears to be a serious issue, the absence of a financial institution that can oversee transactions and give the authorities the information they need is a fundamental blockchain technology premise that cannot be disregarded. A significant danger for the world economy is shown by a second possible threat that is directly related to the volatility of the cryptocurrency market and the contagion effect, which can expose the whole financial system to a disruptive process (Sas & Khairuddin, 2019).

RESEARCH GAP

This article is aimed to explore possible challenges linked with Cryptocurrency, along with opportunities to show the right research direction to increase awareness among cryptocurrency users. There is very little academic overview of cryptocurrencies in academia which defines the opportunities and challenges to the crypto users.

OBJECTIVES OF THE STUDY

To overview the opportunities of cryptocurrencies.
To find the challenges of cryptocurrencies.

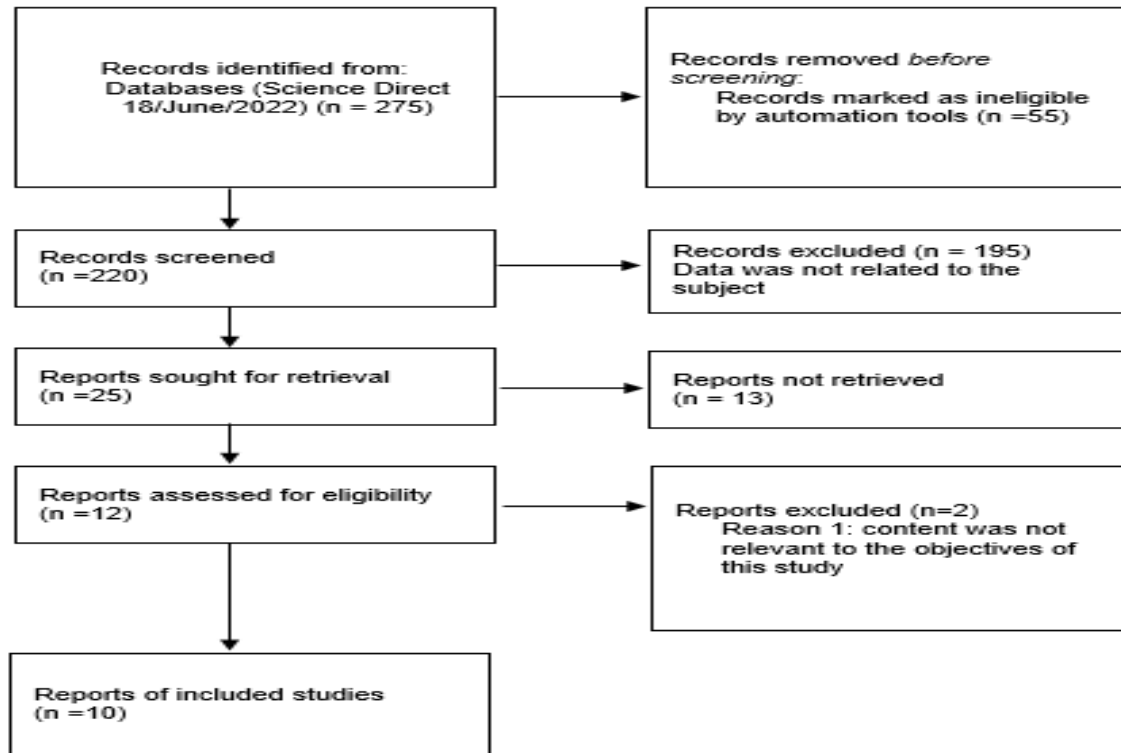
METHODOLOGY

Research method

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) research method was applied. PRISMA is a minimal set of elements for systematic reviews and meta-analyses that are based on evidence (Pahlevan Sharif et al., 2019).

Data tool and collection

The data of this study was in a textual form, in other words, it is secondary data. On 18 June 2022, from Science Direct academic search engine data was retired (sciencedirect.com). Furthermore, through Advance search terms were used as (cryptocurrencies, cryptocurrency, opportunities, challenges, opportunity, and challenge) search terms. The results showed 275 documents. With the condition of 2015 to 2022/June/18. with below flow. Figure 1 PRISMA Diagram



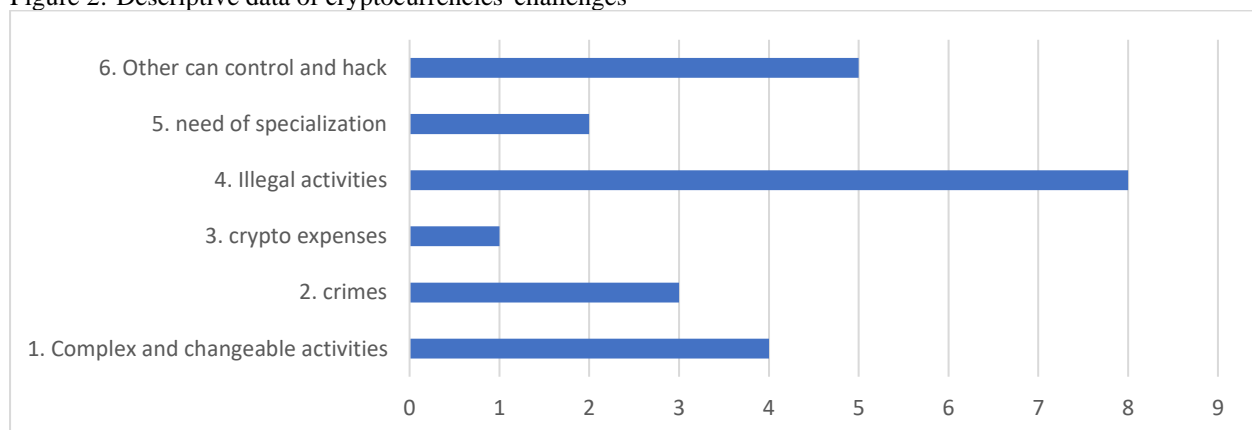
DATA ANALYSIS

Data was analyzed through Atlas.ti 9. The data was coded in to 13 codes which infer the objectives of the study.

RESULTS AND FINDING

Result of the data is written as below.

Figure 2:-Descriptive data of cryptocurrencies' challenges



Bar chart (Figure 2) shows the descriptive data of cryptocurrencies' challenges. It had six themes. Complex and changeable activities, crimes, crypto expenses, illegal activities, the need for specialization, and others can be controlled and hacked.

The first theme was complex and changeable activities, as some authors claimed that "crypto-assets represent a manifold increase in complexity when compared to these securities." A crypto asset is a sort of hybrid asset comprising rights of different types and is also a sort of bundling of different value sources." In addition, "In the

best-case scenario absent fraud, bundling makes it very hard to properly assess the economic value of the crypto-assets and may lead to mispricing or even bubble formation." In another article, it was argued that "the prerequisites for cryptocurrency adoption."

In the second theme of crime, there were some authors argued "The corruption perception index, control of corruption and economic freedom index exhibit a negative correlation which shows that countries with poor governance and economic structures would hinder the adoption of technology." In addition, some authors argued "greater rates of money laundering and cryptocurrency mining, as well as the proliferation of ransomware and the dark web, and increased susceptibility to digital terrorism or hacking, and even the erosion of privacy and spying." Moreover, some authors mentioned the "criminal transactions."

The third theme was crypto expenses that most of our energy waste such as "the energy in the data centers goes to cryptocurrency."

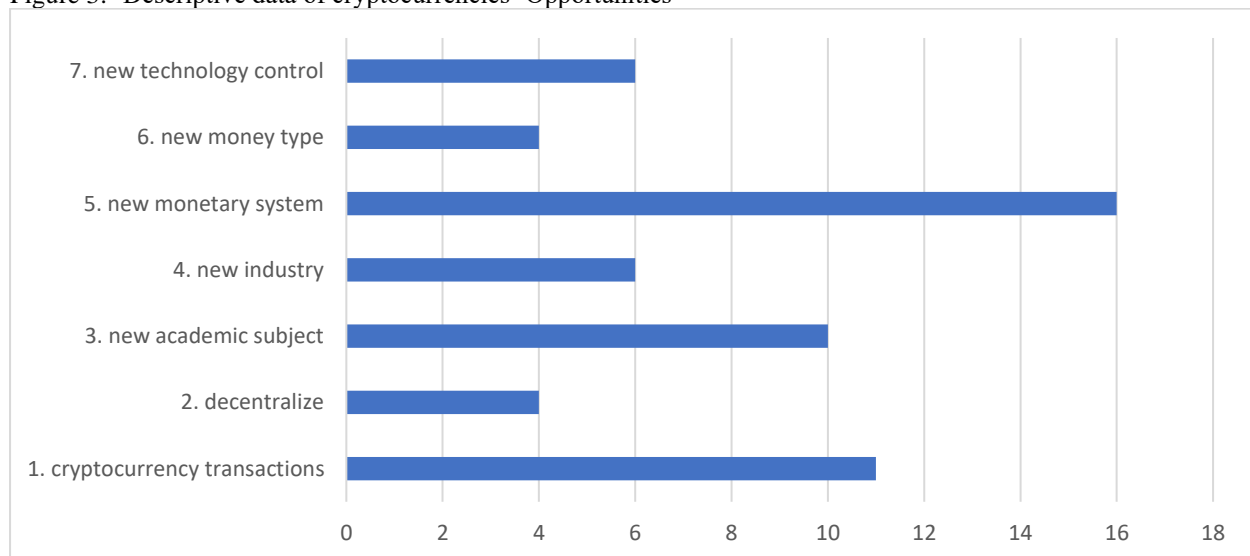
The fourth challenge was to identify illegal activities. There was more evidence that proved that cryptocurrencies are significantly related to illegal activities. Such as "sale of illegal drugs", "price manipulation", "duplication of cryptocurrencies", "markets lack regulation", "markets could enhance economic insecurity", "instability in financial markets. Datacenters could create further investment risk", and "cryptocurrency mining and taxation as well as financial crime and laundering money."

The fifth dimension was the need for specialization in cryptocurrencies. It is also a challenge for normal and safe crypto transactions. As the author argued,

"A potential explanation for the decrease in the number and volume of ICOs... and its problems or as a form of issuance specialization", in addition, "lack of information provided in most ICOs makes it hard to explain how rational investors could make such investment choices."

The sixth theme was that others can control and hack cryptocurrencies. For instance, "The case of Binance became notorious because it is the most reputable crypto exchange where, apart from the theft of cryptocurrency, the hackers were able to gain control of several private client accounts." In addition, "Ethereum community after being applied to solve the DAO hack."

Figure 3:- Descriptive data of cryptocurrencies' Opportunities



Bar chart (Figure 3) shows the cryptocurrency opportunities, which have seven dimensions. The first was cryptocurrency transactions, which defined the online and technological mood of money transactions from peer to peer. As some authors noted that "there may be significant costs whenever the tokens are presold, listed on a centralized crypto exchange and when airdrops are performed,"... governments and international institutions are leaving the sandbox approach and are moving in to regulate crypto assets." In addition, some noted that "The extreme price swings and complexity in cryptocurrency markets drives multifarious research into co-movements, in both time and frequency, among cryptocurrencies, ... Furthermore, an author noted that "It is widely accepted that cryptocurrencies such as Bitcoin or Ethereum stand in contravention to central banks and legacy financial institutions," and "cryptocurrencies could potentially play during periods of exceptional market stress."

The second theme was decentralization, which gives more equal access to everyone for mining and using and there is no outside centralized control. As some authors noted, "based on Blockchain technology and operates according to its own rules, as it is not regulated by any central authority." Furthermore, the "market is currently dominated by cryptocurrency issued by private entities." In addition, "the impact of the US dollar in the international payment system."



The third theme was that it is a new academic topic for studying at universities. For instance, some authors noted that “ its introduction as a core component of Bitcoin and the subsequent crypto-economics convey an astonishing example of how forgotten academic work can be properly updated and exploited in real practical scenarios.” In addition, “Crypto-assets are contracts that provide the owner with certain rights formalized in code, referred to as smart contracts” Furthermore, “Cryptocurrency adoption has the strongest correlation with education.”

The fourth theme was a new industry. It is a new kind of business that has benefits and losses. As some authors noted that “Another interesting area that may impact cryptocurrencies and businesses is prediction marketplace systems (PMSs), which can be considered information providers or oracles.” “P2P implementations of PMS based on Blockchain”, in addition, to “academic and industry.”

The fifth theme was the new monetary system. It means it is a new kind of money without any physical thing. Money can be generated with mining, as some authors noted that “ the new digital currency system... has the power to transform the global monetary system.” In addition, some authors argued that “ A financing alternative that has been gaining considerable importance is the Initial Coin Offerings (ICO), a means of financing early-stage digital innovations through the issuance of crypto-assets.” Furthermore, “services could be handled by performing micro-transactions in exchange,” and “datacenters could bring in tax revenue and investment that would enable the national government to keep supporting rural villages.”

The sixth dimension of the cryptocurrency opportunity was the new money type. Cryptocurrencies have many types and every day it is increasing. For instance, some authors mentioned that “ five leading cryptocurrencies Bitcoin, Ethereum, Ripple, Litecoin, and Bitcoin Cash”, in addition, an author added that “People’s Bank of China had launched a cryptocurrency called the Digital Currency Electronic Payment (DCEP), which had been primarily the work of the largest four state banks and three telecoms companies within a stage-by-stage roll-out.”

The seventh theme was new technological control. It means that cryptocurrency is controlled by new technology, which gives more assurance to users. For instance, some authors noted that “ based on blockchain technology and operates according to its own rules”, in addition, some noted “Blockchain technology prides itself on its technological security, supported by cryptography and a decentralized ledger”, moreover, an author pointed that “To ensure that information is valid for example, ensuring if someone is sending money that the sender has the money to send the blocks are assembled in a chain that makes everything trackable.”

SUMMARY

In a nutshell, there were 13 themes. Six themes highlight issues such as crimes, cryptocurrencies' costs, illicit operations, the necessity for expertise, and other things that may be controlled and hacked. Additionally, seven themes demonstrate the use of cryptocurrencies for instant payments. Decentralization, new academic subjects, new industries, new money types, new monetary systems, and new technical controls are presented together with bitcoin transactions.

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