

A Study on the Survey of Cryptocurrency

Karan Pardeshi

Abstract— A cryptocurrency, crypto-currency, or crypto is a virtual currency which secured by cryptography are based on decentralized networks (made on blockchain technology) that is distributed across a large number of computers. A disparate feature of cryptocurrencies is that they are not regulated, which means, There is no involvement of central authority or any government agency.

In this paper we examine and compare and contrast advantages and disadvantages of cryptocurrency. Finally, this paper will also summarize the future trends of cryptocurrencies.

Keywords— crypto, cryptocurrency, Blockchain, Bitcoin, Ethereum.

I. INTRODUCTION

The purpose of this research paper is on to find advantages and disadvantages of cryptocurrencies. The technology used behind cryptocurrency is blockchain technology.

Blockchain being an extremely innovative technology, a representative sample of research is presented, spanning over more than a decade, starting from the early work in this field. Different types of usage of Blockchain and other digital ledger techniques, their challenges, applications, security and privacy issues were investigated.

Blockchain, the technology behind Bitcoin crypto-currency system, is considered very important for forming the backbone for ensuring enhanced security and privacy for various applications. Blockchain uses a changeable Public Key (PK) to record the users' identity that provides an extra layer of privacy. [1] The successful adoption of blockchain has been implemented in diverse non-monetary systems such as in online voting, decentralized messaging and distributed cloud storage systems, and so on.

The cryptocurrency market is experiencing rapid growth. This market allows companies to make money without engaging in trading capital and to be traded without being listed on stock exchanges. The entire set of coins in the crypto market ranges from well-known currencies such as Bitcoin, Ripple, and Ethereum to many more coins.

Since the release of Bitcoin to the public in January 2009, more than 4000 cryptocurrencies [23] have been developed, the majority having success. The field research is still ongoing. In the crypto sector, the majority focus is on Bitcoin rather than a more diverse spread of cryptocurrencies and is steadily being outpaced by fluid industry developments, including new coins, technological progression, and increasing government regulation of the markets. Though the fluidity of the industry

does, admittedly, present a challenge to research, a thorough evaluation of the cryptocurrency industry is needed.

There are two views on the cryptocurrency market. The first is that most and perhaps all of the coins represent bubbles and fraud. Secondly, blockchain technology embedded in coins can be an important innovation and that at least some of the coins could be assets representing the future of this technology. If the latter case is true, analyzing the cryptocurrency market from the empirical asset pricing point of view is important for at least two reasons. The first reason is to understand whether the returns of cryptocurrencies share similarities with other asset classes, most importantly, with equities. The second reason is to establish a set of powerful general elements that can be used as style written facts as well as important inputs to test and construct theoretical models of cryptocurrency. [24]

Section 1 will explain technology fundamentals of blockchain. Section 2 will give overview of crypto industry. Section 3 will give a holistic view of factors affecting sector growth, with a strong focus on the control area. In Section 4 will explain advantages and disadvantages of cryptocurrency. Section 5 will be conclusion.

Note: Because the cryptocurrency industry is still small and the factors that influence it are changing daily, there are few comprehensive or completely revised academic resources on the topic.

SECTION I. TECHNOLOGY FUNDAMENTALS OF BLOCKCHAIN

This section briefly describes the basics of Blockchain technology. It has two distinct features, as follows:

1. Transaction: A transaction, in a Blockchain, represents the action triggered by the participant.
2. Block: A block, in a Blockchain, is a collection of data recording the transaction and other associated details such as the correct sequence, timestamp of creation, etc. [25]

Blockchain can be public or private, depending on the scope of its use. A public Blockchain enables all the users with read and write permissions such as in Bitcoin, access to it. However, there are some public blockchains that limit the access to only either to read or to write. On the contrary, a private Blockchain limits access to selected trusted participants only, for the purpose of keeping users' information confidential. This applies especially to government agencies and the concerns who accompany or support them. [1]

One of the great benefits of Blockchain is that it and its implementation is public. Each participating entities possesses an updated complete record of the transactions and the associated blocks. Therefore the data remains unchanged, as any changes will be publicly verified. However, data in blocks is encrypted with a secret key and therefore cannot be interpreted by everyone. Another major advantage of the Blockchain technology is that it is decentralized. It is decentralized in the sense that:

- There is no single device that stores the data (transactions and associated blocks), rather they are distributed among the participants throughout the network supporting the Blockchain.
- The transactions are not subject to approval of any single authority or have to abide by a set of specific rules, thus involving substantial trust as to reach a consensus.
- The overall security of a Blockchain eco-system is another advantage. The system only allows new blocks to be appended. Since the previous blocks are public and distributed, they cannot be altered or revised. [26]

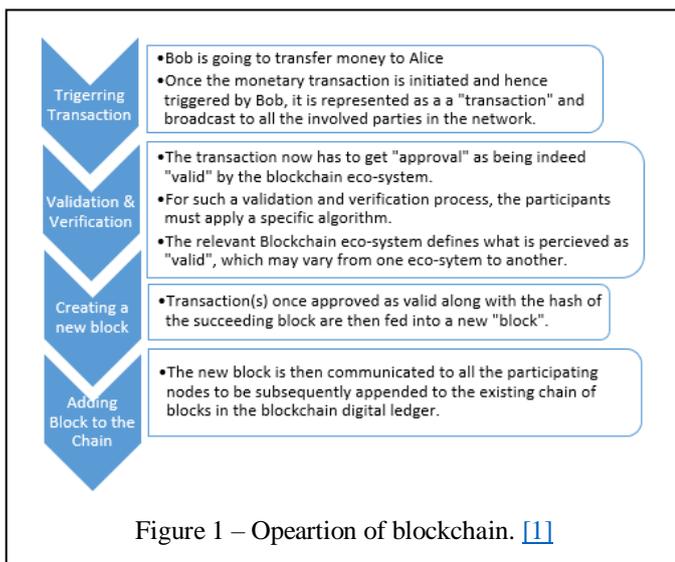


Figure 1 – Opeartion of blockchain. [1]

Figure 1 demonstrates how Blockchain transactions takes place, using a step-by-step example. Bob is going to transfer some money to Alice. Once the transaction is initiated and hence it is triggered by Bob, it is represented as a “transaction” and broadcast to all the involved parties in the networks. The transaction now has to get “approval” as being indeed “valid” by the Blockchain eco-system. Transaction(s) once approved as valid along with the hash of the succeeding block are then fed into a new “block” and communicated to all the participating nodes to be subsequently appended to the existing chain of blocks in the Blockchain digital ledger. [1]

SECTION II. OVERVIEW OF CRYPTO INDUSTRY

In short, cryptocurrency is a virtual currency system that works as much as a regular currency, allowing users to offer a

tangible payment for goods and services without a centralized authority. Cryptocurrencies rely on the transmission of digital information, utilizing cryptographic methods to ensure legitimate, unique transactions. Bitcoin took the digital currency market one step further, decentralizing the currency and freeing it from hierarchical power structures. Instead, individuals and businesses transact with the coin electronically on a peer-to-peer network.

Because of its anonymity, Bitcoin and other digital currencies are often compared to regular currency. However, unlike regular currency, these funds are only digital and are primarily used online. Digital currencies have the ability to compete with other online payment methods such as credit / debit cards and PayPal. It is possible that Bitcoin and other digital currencies could have a long-term impact on both financial and payment systems, but these investments are still in new stage. There are many unanswered questions about their viability, as well as the potential of digital currencies to be a disruptive technology.

Satoshi Nakamoto, The developer of Bitcoin and very first cryptocurrency, launched Bitcoin in 2009 is the first successful decentralized cryptocurrency i.e., they have no central authority. They use cryptography to control transactions, increase the supply and prevent fraud and to do unique transactions. Hence, they often are referred to as cryptocurrencies. Once confirmed, all transactions are stored digitally and recorded in a ‘blockchain,’ which can be thought of as an accounting system. [27]

Litecoin was released in 2011, achieved modest success and the highest cryptocurrency market cap after Bitcoin until it was overtaken by Ripple in 2014. Litecoin modified Bitcoin’s protocol, increasing transaction speed with the idea that it would be more appropriate for day-to-day transactions. Ripple has introduced a completely different model from the one used by Bitcoin and currently maintains the second highest market capitalization of approximately \$30 billion. [28]

SECTION III. A HOLISTIC VIEW OF FACTORS AFFECTING SECTOR GROWTH, WITH A STRONG FOCUS ON THE CONTROL AREA

Despite the attraction that cryptocurrency has gained over the last half decade, its path has been turbulent. Many argue that the performance of anarchic cryptocurrency has been underwhelming in comparison to the hype it stirred when it publicly emerged in 2009. This section will address two of the main factors that have affected the growth of the cryptocurrency industry and will continue to influence its development and integration into the broader financial scheme well into the future: international government regulatory attempts, and ambivalent public perception in moving toward its wider adoption.

A. REGULATIONS BY COUNTRY.

While the expanding cryptocurrency market has the potential to change the way money is exchanged, its introduction into global venues is fraught with challenges and potential pitfalls. Because virtual currencies are not universally recognized as official means of paying for goods and services, developing standardized systems for their use is critical. For the

currencies to be sustainable, their legal status must be established. [29]

Regulatory systems are expanding, with many approaches being adopted by various governments. The current regulatory measures are still in its infancy and continue to emerge with a rapidly growing industry.

Regulations will provide greater legitimacy for payments that strive to gain public acceptance. They will set market conditions fairly and reduce at least some volatility. While governments are exploring a combination of regulatory measures, their common goal is the same: curb fraud, protect consumers, respect economic sanctions, and introduce effective tax systems. A brief detail of current cryptocurrency policy in various states will offer clarity and a broad overview of contemporary regulation attempts. Because of the infancy of virtual currency, available data is subject to change.

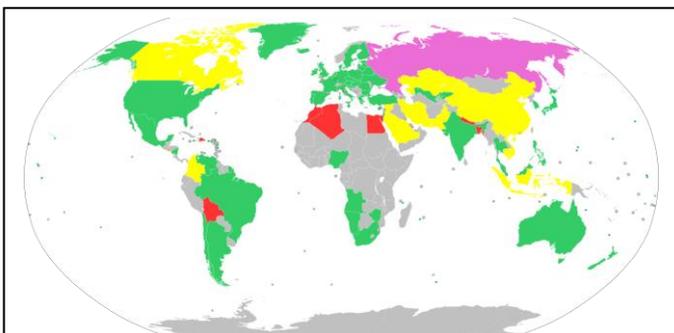
TABLE I. Scopes of crypto and respective countries.

Scope	Countries
Legal Tender	El Salvador [2]
Prohibited	China [4], Russia [16], Nepal [5], UAE [5], Egypt [17], Qatar [18], Taiwan [3]
Crypto Tax	USA [19], Japan [20], Germany [21]
Not Legal Tender	India [22]

B. LEGALITY OF BITCOIN BY COUNTRY.

TABLE II. Legal status of Bitcoin in various countries. [5]

Color	Legal Status of Bitcoin
Orange	Legal Tender
Green	Permissive (legal to use bitcoin)
Yellow	Contentious (some legal restrictions on usage of bitcoin)

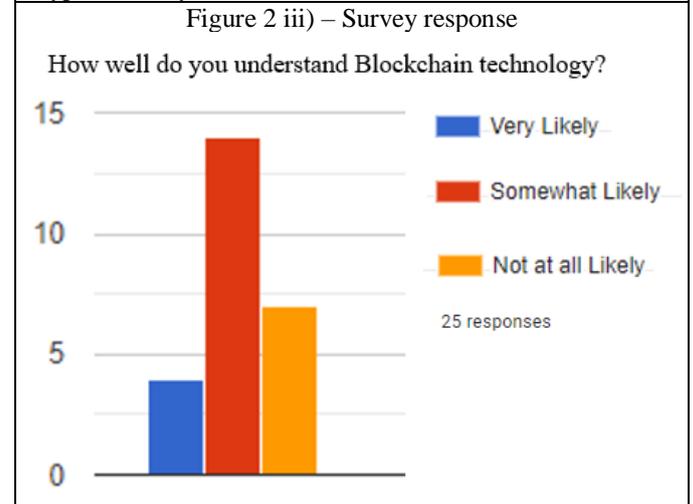
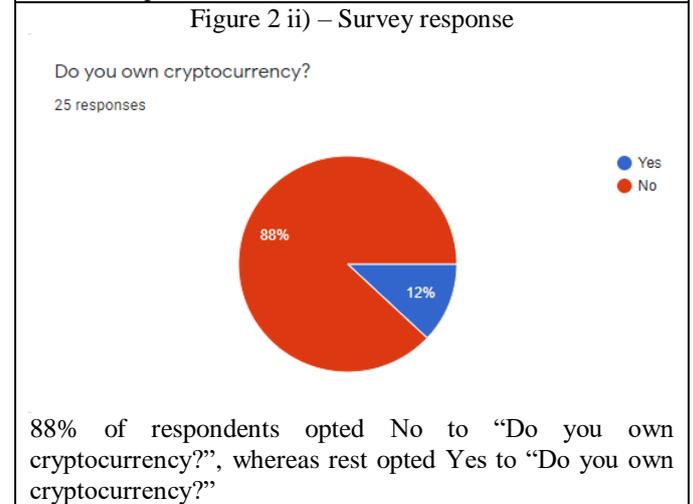
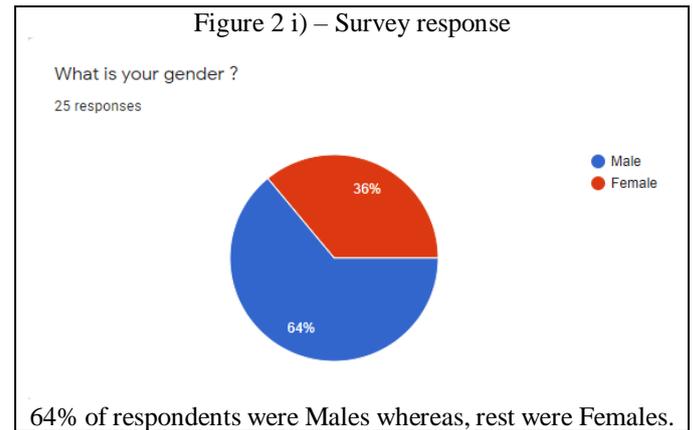


Source - https://en.wikipedia.org/wiki/Legality_of_bitcoin_by_country_or_territory#cite_note-JSC-31

Color	Legal Status of Bitcoin
Pink	Contentious (bitcoin is not prohibited directly)
Red	Hostile (Full or Partial)
Grey	No Data

C. SURVEY & PUBLIC PERCEPTION.

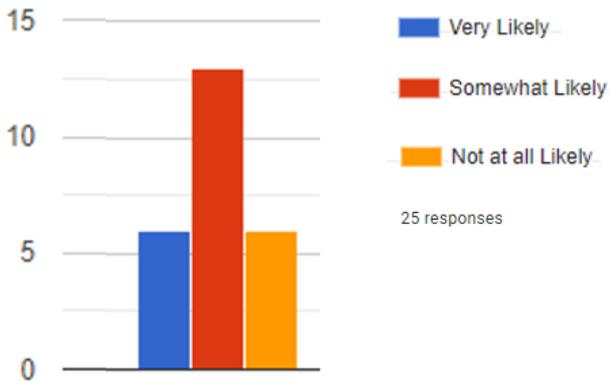
On a survey conducted on 25 people, following were responses for the following questions.



4 respondents (16%) were very well aware of Blockchain, 14 respondents (56%) were somehow aware of it & 7 respondents (28%) did not know about blockchain.

Figure 2 iv) – Survey response

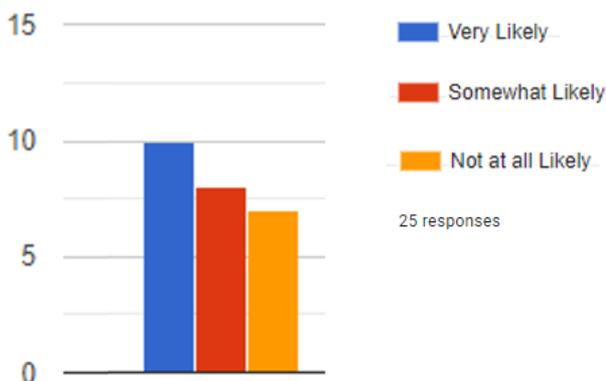
Cryptocurrency is still in its early stage and may undergo many changes in the near future which makes it extremely volatile. How likely would this affect your decision to use cryptocurrency?



13 respondents (52%) believed that it will somewhat likely to affect to use crypto in infancy stage. Meanwhile 6 respondents from both (very likely & not at all likely) believed it will affect decision on crypto. (24%)

Figure 2 v) – Survey response

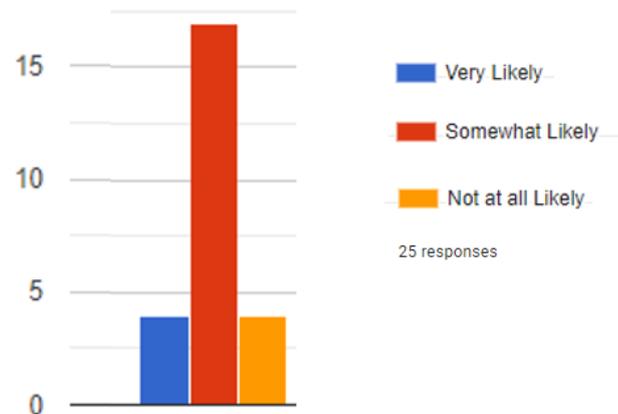
If cryptocurrency providers created tangible coins (or notes) for cryptocurrency users with banks and ATMs readily available but remained non-government regulated, would this increase your interest in cryptocurrency?



10 respondents (40%) showed their very likely interest, 8 respondents (32%) showed their somewhat likely interest & 7 respondents (28%) showed their not at likely interest to, “If crypto is tangible with non-regulated.”

Figure 2 vi) – Survey response

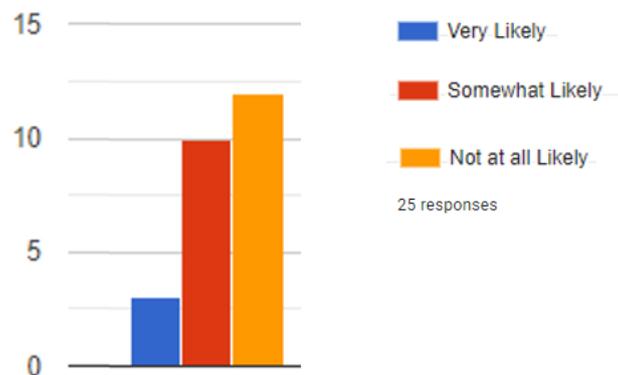
If cryptocurrency is government regulated but remained intangible, would this increase your interest in cryptocurrency?



4 respondents (16%) showed their very likely interest, 17 respondents (68%) showed their somewhat likely interest & 4 respondents (16%) showed their not at likely interest to “If crypto is intangible and regulated.”

Figure 2 vii)– Survey response

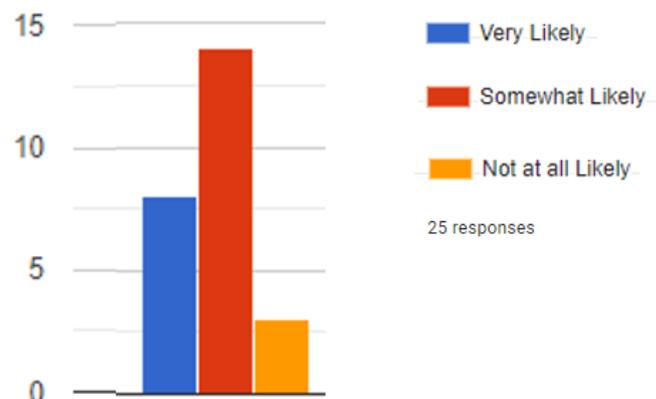
How likely do you think, cryptocurrency will replace paper money (Rupee, Dollar) etc?



3 respondents (12%) showed their very likely interest, 10 respondents (40%) showed their somewhat likely interest & 12 respondents 48% showed their not at likely interest to “How likely crypto will replace paper money?”

Figure 2 viii)– Survey response

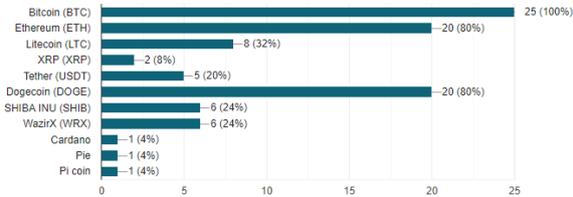
Should India legalize the use of cryptocurrency in future ?



8 respondents (32%) showed their very likely interest, 14 respondents (56%) showed their somewhat likely interest & 3 respondents (12%) showed their not at likely interest to "Should India legalize use of crypto in future?"

Figure 2 ix) – Survey response

Which Cryptocurrency do you know from the following ? Add any other cryptocurrency, if you know.
25 responses



All of the respondents were aware of Bitcoin (BTC) cryptocurrency.

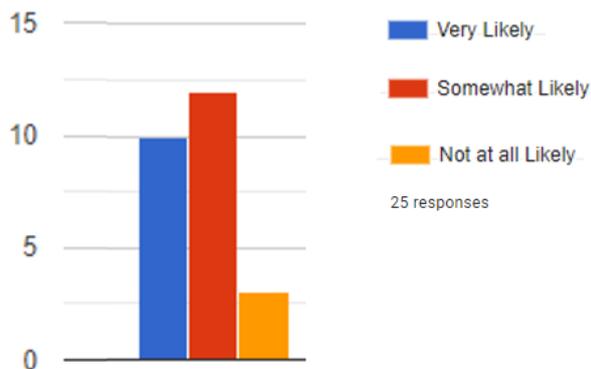
SECTION IV. ADVANTAGES AND DISADVANTAGES OF CRYPTO.

Advantages of Crypto.

1. Independently Governed.
The cryptocurrency is distributed, and there is integrity. [6]
2. Strong Security & Confidential.
When you perform the transaction in cryptocurrency, you cannot reverse it. There will be a reliable encryption technique used throughout the cryptocurrency transaction process to protect from hackers and tampering the information. [7]
3. Decentralized.
The blockchain technology will manage the database that has the bitcoin transaction records. The decentralization would involve only two parties in the transaction, i.e., the sender and receiver. You no more have to deal with any third party. There is no one to monitor what you are doing. [7]
4. Potential for higher returns.

Figure 2 x) – Survey response

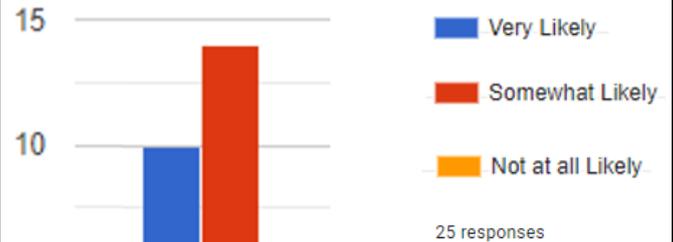
In 5 years, do you think cryptocurrency will be worth more or less than today?



10 Very likely respondents (40%), 12 somewhat likely respondents (48%) & 3 not at all likely respondents (12%) believed that, the worth of Bitcoin will be higher in future.

Figure 2 xi) – Survey response

How likely do you think that cryptocurrency will open new employment opportunities?



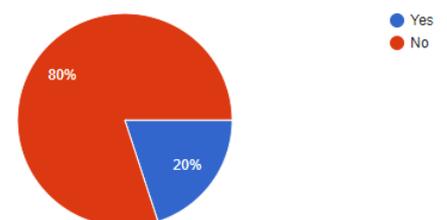
10 very likely respondents (40%), 14 somewhat likely respondents (56%) & 1 not at likely respondent (4%) believed that, there will be employment opportunities in cryptocurrency industry.

Disadvantages of Crypto.

1. Potential for large loss because of high risks. [13]
2. Not regulated.
In many countries, cryptocurrency are not legal tender & their price is determined by the supply and demand of their market. [12]
3. Prone to Pump and Dump & Investment Scams.
Pump and Dump is a fraud that involves artificially inflating the price of an owned stock through false and misleading positive statements, in order to sell the cheaply purchased stock at a higher price. [11]
4. Effects Environment.
Mining requires lot of energy and Bitcoin, the most widely-known cryptocurrency network, uses 121 Terawatt-hours of electricity every year. [8] [9]

Figure 2 xii) – Survey response

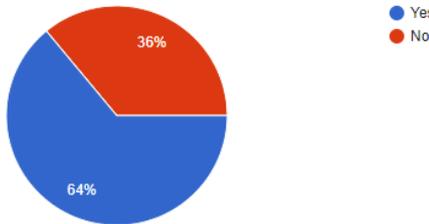
Are you aware of PUMP-AND-DUMP (P&D) scheme in Cryptocurrency ?
25 responses



As per survey conducted, 80% of respondents were not aware of Pump and Dump scheme.

Figure 2 xiii) – Survey response

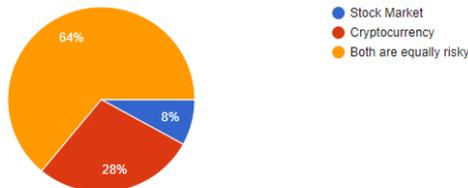
Are aware of Environmental Impact of Cryptocurrencies?
25 responses



As per survey conducted, 64% of respondents were aware of environment impact of cryptocurrencies.

Figure 2 xiv) – Survey response

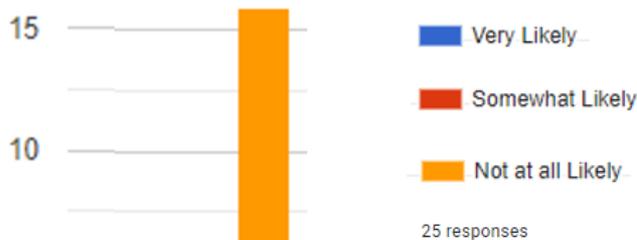
In your opinion, which is more risky, investing in the stock market or investing in cryptocurrency?
25 responses



64% of respondents believed that, there is equal risk in investing in cryptocurrency and stock market. Meanwhile 28% of respondents believed there is risk in investing only in cryptocurrency.

Figure 2 xv) – Survey response

How likely are you to invest in cryptocurrency this year ?



16 respondents (64%) will not invest in cryptocurrency this year.

SECTION V. CONCLUSION.

Cryptocurrencies such as Bitcoin still have numerous obstacles to overcome [14]. Most importantly, people need to be aware of blockchain technology and investment in crypto. With more use of Blockchain technology in cryptocurrency,

there would be massive growth in blockchain size that the distributed ledger model would become impractical [15]. Moreover, Bitcoin may not dominate the industry in the long run, but the industry owes its existence to the pioneering anarchic coin. The fact while investing in crypto one should do is, it contains high risks and it should be done with caution. Finally, because of the substantial energy costs and diminished rewards over time associated with the mining process, users may eventually be forced to bear increasingly high and unreasonable transaction costs [8] [15].

REFERENCES

- [1] Mahdi H. Miraz and Maaruf Ali, "Applications of Blockchain Technology beyond Cryptocurrency", *Annals of Emerging Technologies in Computing (AETiC)*, Print ISSN: 2516-0281, Online ISSN: 2516-029X, pp. 1-6, Vol. 2, No. 1, 1st January 2018, Published by [International Association of Educators and Researchers \(IAER\)](http://www.theiaer.org/), Available: <http://aetic.theiaer.org/archive/v2n1/p1.pdf>.
- [2] In a world first, El Salvador makes bitcoin legal tender. <https://www.reuters.com/world/americas/el-salvador-approves-first-law-bitcoin-legal-tender-2021-06-09/>
- [3] https://www.fsc.gov.tw/ch/home.jsp?id=96&parentpath=0_2&mcustomize=news_view.jsp&dataserno=2014010600_03&toolsflag=Y&dttable=News
- [4] Is Bitcoin Banned in China? <https://www.investopedia.com/news/bitcoin-banned-china/>
- [5] Legality of bitcoin by country or territory https://en.wikipedia.org/wiki/Legality_of_bitcoin_by_country_or_territory
- [6] Advantages and Disadvantages of Cryptocurrency in 2020 <https://www.geeksforgeeks.org/advantages-and-disadvantages-of-cryptocurrency-in-2020/>
- [7] Advantages of Cryptocurrency: All You Need to Know <https://www.europeanbusinessreview.com/advantages-of-cryptocurrency-all-you-need-to-know/>
- [8] What's the Environmental Impact of Cryptocurrency? <https://www.investopedia.com/tech/whats-environmental-impact-cryptocurrency/>
- [9] Bitcoin consumes 'more electricity than Argentina' <https://www.bbc.com/news/technology-56012952>
- [10] Crypto Crimes – Comprehensive Overview <https://cryptohead.io/research/crypto-crime/>
- [11] https://en.wikipedia.org/wiki/Pump_and_dump
- [12] <https://www.loc.gov/collections/publications-of-the-law-library-of-congress/about-this-collection/world-survey.php#:~:text=Cryptocurrencies%20are%20not%20equal%20tender.and%20demand%20of%20their%20market.>
- [13] Bitcoin investors lost \$14.2 billion in recent crypto crash. <https://www.livemint.com/market/cryptocurrency/bitcoin-investors-lost-14-2-billion-in-recent-crypto-crash-11621925542181.html>
- [14] <https://www.coindesk.com/dutch-central-bank-cryptocurrency-experiments>
- [15] Dutch Central Bank Presents Results of Cryptocurrency Experiments <https://www.coindesk.com/citi-bitcoin-banks-remittances-wont-disrupt>
- [16] <https://www.coindesk.com/putin-russia-stop-illegal-cross-border-digital-assets-transfer>
- [17] Egypt's central bank prohibits issuing cryptocurrencies or carrying out activities related to them <https://www.egypttoday.com/Article/3/100224/Egypt-s-central-bank-prohibits-issuing-cryptocurrencies-or-carrying-out>

- [18] Freemanlaw <https://freemanlaw.com/qaatar-and-cryptocurrency/#:~:text=Like%20the%20QFCRA%2C%20Qatar%27s%20central,are%20no%20guarantors%20or%20assets.%E2%80%9D>
- [19] A Guide to Common US Crypto Tax Scenarios <https://chanfest22.medium.com/a-guide-to-common-us-crypto-tax-scenarios-8174e2ec3e44#:~:text=In%20the%20US%2C%20the%20amount,and%20your%20ordinary%20tax%20rate.&text=You%20have%20a%20short%20term,%24150%20in%20additional%20federal%20taxes.>
- [20] Crypto Taxes in Japan <https://tokentax.co/guides/crypto-taxes-in-japan/>
- [21] Germany Crypto Tax Guide 2021 <https://koinly.io/guides/crypto-tax-germany/#:~:text=In%20Germany%2C%20if%20you%20sell,600%E2%82%AC%20are%20tax%20exempted.>
- [22] Cryptocurrency in India: What's the govt's stand, legal status, its future <https://www.businesstoday.in/latest/corporate/story/cryptocurrency-in-india-what-the-govt-stand-legal-status-its-future-296570-2021-05-20#:~:text=In%202018%2C%20the%20finance%20minister,will%20explore%20the%20use%20of>
- [23] The 10 Most Important Cryptocurrencies Other Than Bitcoin <https://www.investopedia.com/tech/most-important-cryptocurrencies-other-than-bitcoin/#:~:text=One%20reason%20for%20this%20is,communities%20of%20backers%20and%20investors.>
- [24] Giancarlo Giudici, Alistair Milne & Dmitri Vinogradov "Cryptocurrencies: market analysis and perspectives" <https://link.springer.com/article/10.1007/s40812-019-00138-6>
- [25] <https://en.wikipedia.org/wiki/Blockchain>
- [26] Fran Casino, Thomas K. Dasaklis & Constantinos Patsakis "A systematic literature review of blockchain-based applications: Current status, classification and open issues" <https://www.sciencedirect.com/science/article/pii/S0736585318306324>
- [27] <https://en.wikipedia.org/wiki/Bitcoin>
- [28] <https://coinmarketcap.com/currencies/xrp/>
- [29] Ryan Farrell, University of Pennsylvania "An Analysis of the Cryptocurrency Industry" https://repository.upenn.edu/cgi/viewcontent.cgi?article=1133&context=wharton_research_scholars