

Future of Crypto – Currency and the Sustainability of Bitcoin

Batch: PGDMFC16CM

Jasmine Pasha/2108

Shruti Pandey/ 2124

Chandsi Sharma/ 2104

Abstract:- When the recession hit in 2008, individuals gave up all the hopes and faith in banks and financial institutions. Cryptocurrency system was established in order to remove banks. Satoshi Nakamoto, who might be a person or a community of individuals, created Bitcoin with the goal of allowing individuals to send money to each other without the need of a bank or a related parties. Mainly bitcoin was created to let anyone undertake money transfers without depending on governments or banking firms. The following study majorly highlights the acceptance of crypto – currency in India, especially amongst the younger investors, and whether or not they believe in the future and sustainability of Crypto – currency, especially Bitcoin, given that it is, by far the largest digital coin, in respect with the market capitalization. We took a survey, to understand the investing behaviour of the Indian population. Our study included convenience sampling, in the age group of 20 – 40 years, analysis of which is talked upon in the following section. Knowing that not all favour crypto – currency, due to many reasons, the paper also talks about the issues and challenges that Bitcoin, and other digital coins face in the market, on both, domestic and global level. In the next immediate section, we shall also look at the evolution of Bitcoin, its trade mechanism and the turning point for India, for this new age technology.

I. INTRODUCTION

Bitcoin is a decentralised virtual currency that permits two parties to transact funds without the involvement of intermediaries such as central body or financial institutions. Bitcoin is a peer-to-peer virtual money, which means all transactions takes place amongst independent participants in the network with no need for a middleman to allow or facilitate them. The Bitcoin blockchain, essentially employs a proof-of-work method for transactions evaluation and monitoring, which enables individuals to transact with one another. Bitcoin has been marketed as a way to do commerce without going via a mediator. Rather than relying on third parties such as banks and other financial institutions, the Bitcoin system relies on cryptographic validation to confirm the channel's validity (Hicks, 2022).

➤ *Objectives of the study:*

- Does Indian population believe in the future of Crypto – Currency
- When compared to the top 5 crypto coins, whether or not is the bitcoin most preferred currency amongst the Indian population
- Issues and challenges that Bitcoin and other crypto – currencies face as a whole

II. LITERATURE REVIEW

According to Devries (DeVries, 2016), Bitcoin has been witnessing a niche market, which moving further could either become mainstream, or a reason for failing all together. The author believes that the crypto – currency phenomenon is still in the initial phase, or infancy, and makes it difficult to predict the success of the system.

Mohammed Mubarak in his report, “A study on Crypto – currency in India” (Mubarak, 2022), has compared the risk and returns of Bitcoin with gold, stating that one does not need to invest in former just for the sake of diversification, rather is for speculative betters who make returns from market inefficiencies. He says the latter is a better investment option, given the consistent returns.

James and Parashar in their paper, “Crypto Currency: an overview on its impact on Indian Economy” (James & Parashar, 2018), highlighted how, regardless of the complications, it has gained much attention and has become a global phenomenon. Even in India, RBI had earlier put a ban on the same, claiming it to be associated with fraud, terrorist funding, money laundering, etc. The system lacks proper authority, however, in India has seen a significant increase in the number of investors, post demonetization.

According to Shailak Jani, crypto – currency offers an effective and an attractive mode of payment methods that could possibly boost companies and operators revenues. However, given that the system is not authorized, their study analyses various risks and challenges that are associated with crypto exchange platforms, concerning the risk that the system holds. Nevertheless, author feels that the future of crypto sounds promising, and there should be proper regulation system brought in place (Jani, 2018).

III. EVOLUTION OF BITCOIN

The Pre Bitcoin Era: Several projects to use cryptographic ledgers to incorporate in online currencies were launched. Bit Gold and B-Money are two examples of concepts that were conceived but never attained.

2008 The emergence of Bitcoin: A mystery man or group claiming to be Satoshi Nakamoto released a document titled "Bitcoin" to a protected site and emailed it to a mailing list.

2009 Start of Bitcoin: Bitcoin is now accessible to the general population. Where transactions were generated and documented, block chains were used.

2010 Valuation: Since the constituents of the growing cryptocurrency had not yet been traded, but just mined, putting a price on them was problematic. So, for the very first time, an bitcoin owner traded 10,000 bitcoins for two pizzas.

2011 Competition: Several began to imitate Bitcoin, with the goal of improving and designing better than Bitcoin by facilitating speedy transactions, confidentiality, and a variety of other benefits. Namecoin and Litecoin were one of the first cryptocurrencies to appear.

2013 The crash: Immediately as the popularity of Bitcoin raised up to \$1000 the market crashed and the valuation reached \$300. This lead to super losses for many investors, it nearly took two years for the market to recover and reach back to \$1000.

2014 Scams: Because of the anonymity characteristic, it widened the door for fraudsters. When Mt.Gox went down,

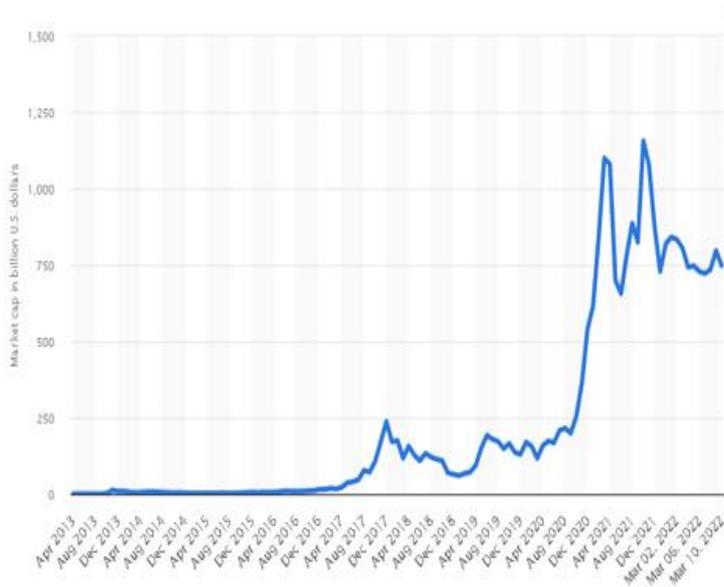
the holders of eighty-five thousand Bitcoins were stolen and never discovered. There is an on-going investigation regarding what and it really happened.

2016 Famous Ethereum: This year has seen a boom in interest in the Ethereum platform, which has resulted in the emergence of Initial Coin Offerings (ICOs) (ICOs). These are crowdfunding systems that enable investors to swap which are essentially stocks or shares in start-up firms in the same way that they can invest in and trade cryptocurrencies.

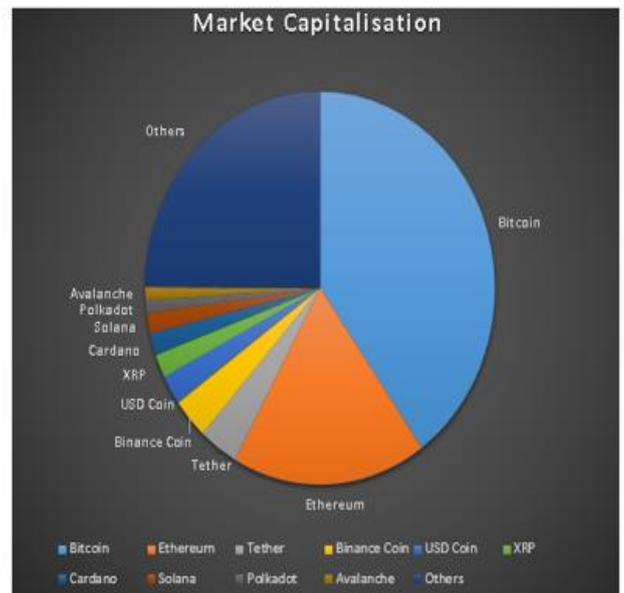
2017 Bitcoin Market: Bitcoin had grown in popularity, attracting a large number of investors. The Blockchain technology underlying Bitcoin, has ignited a transformation in the financial sector that is still in its early stages (Forbes, 2017).

IV. MARKET CAPITALIZATION

The Bitcoin capitalisation surged in April 2021, growing by more over \$1,000 billion USD over the previous months. Ever since then, the market valuation has declined, and it reached approximately 600 billion worth in June 2021. Market capitalization provides virtual currency speculators with a comprehensive view of the industry's size, and tracking the measure's movement demonstrates the amount of money that is being moved in the marketplace. Bitcoin is the earliest digital currency; it is a highly sought-after virtual currency that has achieved significant market traction.

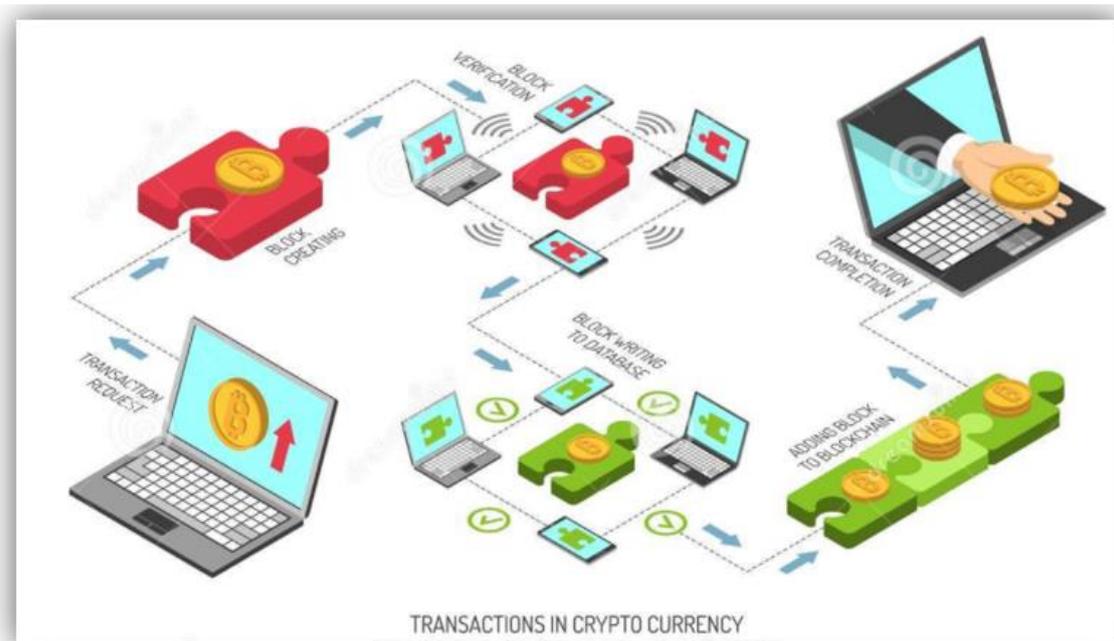


(Statista, 2022)



(CoinGecko, 2021)

➤ Mechanism of how bitcoin transaction works globally:



(Dreamstime, 2022)

Even though bitcoin transactions do not necessitate the participation of a financial institution, authorized authorities transactions must be verified. This is performed by employing cryptographic keys, which seem to be strings of data (passwords) that recognize participants and directly connect to their "wallet" or "account" on the server. Each and every participant has their own private key and also a public key that anyone can see. Combination of both creates a secure unique identifier that may be used to certify members using electronic system and 'unlock' the transactions they wish to perform. Prior to actually adding the transactions to the blocks, the majority of 'nodes,' or computer processors in the network, must affirm that the transaction is genuine. These individuals are also known as miners since they use a computer to validate transactions and are compensated for doing so, this is known as 'proof of work'. For the transaction to be added to the block, they must solve complicated math problems. This is not a simple task, the chances of tackling these challenges are one in a trillion. Mining uses a significant quantity of electricity. As a result, many miners share their resources and divide the benefits between themselves. The blocks are added to the block chain, and the transaction is finished (Euromoney Institutional Investor PLC, 2022).

➤ Turning point for India:

Demonetisation opened the path for potential investors to invest in cryptos. Google revealed that in terms of revenue and size, Indian Bitcoin enquiries had outperformed former searches. The Supreme Court of India repealed the RBI's cryptocurrency ban in 2020. The Indian authority will not assess the state of currencies, but will instead provide suggestions about how to handle concerns such as cryptocurrency awareness, consumer protection laws,

and financial crimes. WazirX which is India's largest cryptocurrency exchange, Bitcoin was the most traded cryptocurrency and Shiba Inu, Dogecoin, Tether followed by. This year, the exchange added about 200 cryptocurrencies. Bitcoin retained its position as the most traded currency (Hashgains, 2017).



V. DATA AND ANALYSIS

➤ *Objective 1*

For understanding our first objective, we conducted primary research. Our study is based on convenience sampling, where we took a survey among Indian population, to see if they believe in the future of crypto – currency or not. The conclusions are drawn out of limited responses (30), respondents of which come from varied professions, however, are equipped with appropriate knowledge of financial assets.

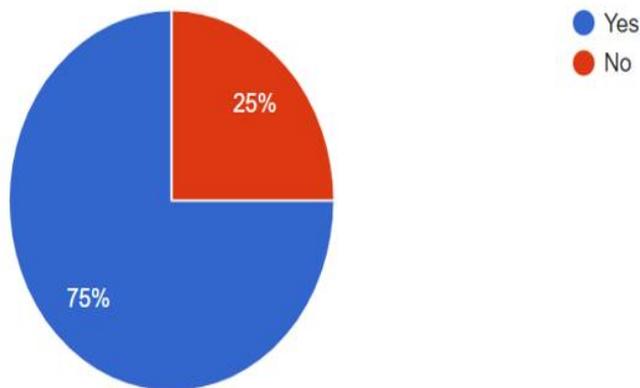


Fig 1.

From the population size, 75% of the respondents believe in the future of crypto – currency, whereas 25% of them has shown a disagreement over the argument.

Out of this 75%, most of the respondents fall into the younger age group, ranging from 21 to 26 years of age. With this, we can establish a relationship between the kinds of investors who believe in this system. Younger population, who are risk takers, and are inclined towards gaining returns from higher volatility in the short run. Given that, the upcoming generation is technology savvy, they believe in the technological advancements this system would bring in. Also, the majority who are in favor, have called themselves tech – savvy, which also helps us to understand that people who understand technology believes it in, since it’s electronically traded, based on crypto – graphic methods. However, this could also mean that people who don’t strongly believe in the system feels that way due to lack of technological knowledge, awareness, and skills. Moreover, few of the respondents who voted against the notion, rather believes in the traditional system of exchange. They feel the lack of integrity and central authority in the system makes it untrustworthy, and could lead to possible frauds. They feel that a currency that is not backed up by any sovereign power can’t be rest assured.

➤ *Objective 2*

We studied our second objective in the similar manner, by conducting a primary research among the same population size, who believed in the future of the crypto – currency, i.e., 75% of the total respondents (drawn from the previous numbers). In this, we tried to know the most preferred digital coin in India and the reasons behind.

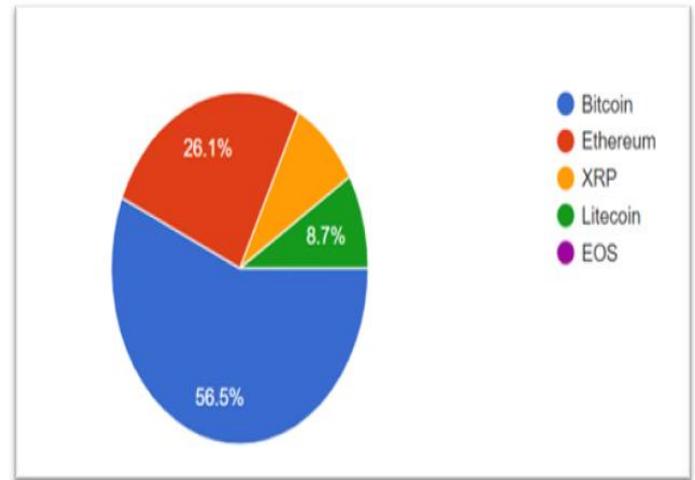


Fig 2.

In the previous sections, we talked about Bitcoin, its evolution and how consistently it has been one of the largest traded crypto – currencies across countries. Bitcoin is the first, and the most popular crypto – currency in the world, since the crypto world, initially started with the Bitcoin.

During our study, we asked the population to choose between the top 5 crypto – coins, to check whether or not, is the Bitcoin most preferred choice of crypto currency in India. The above figure reflects the results from the survey, where Bitcoin is in the lead with 56.5%. Given that, Ethereum is also known to be one of the growing digital coins in the market.

For the people who chose Bitcoin as their preference, they feel that the asset has shown exponential growth in the past years, and have generated significant results. Though the volatility has been high, the returns have been much higher. Also, it has been in the global market for the longest duration, hence becomes credible from the rest. Bitcoin has gained the most attraction since the introduction of crypto currency in India, and for a developing country where people possess lesser knowledge about this new age technology, Bitcoin is one familiar name for people.

The second highest voted coin is Ethereum, where people feel that it has a very deep value in terms of decentralised payment gateway. It is believed to be the future of payment made in decentralised world. Another reason why some people picked Ethereum over Bitcoin, is because they feel the latter has larger exposure as a means to a large number of anti – trust and dark web payments, whereas Ethereum is considered to be less volatile and affordable by the people, and has had a stable graph, unlike Bitcoin, which is known to be the most volatile.

Other crypto coins are known to be affordable, and less volatile, however, are new developments, hence have lesser market share and credibility from the people. Since the whole system altogether lacks integrity, and centralized authority, introduction of any new currency coin in the market is less likely to be highly considered.

➤ *Objective 3*

Crypto currencies have been hyped as the future of finance for a long time, but it wasn't until 2020 that traditionally conservative and risk-averse institutions became active participants in this complex alternative asset class.

When it comes to determining how to best manage cryptocurrency risks, risk managers frequently draw parallels between financial products and cryptocurrencies. However, there are at least seven unique problems that risk managers must be aware of when dealing with cryptocurrencies (uktechnews, 2021).

- **Diversity:** Cryptocurrencies are not interchangeable i.e.; they are not regarded as a legal tender or exchangeable against any legal tender instead they are qualitatively diverse. There are more than 7500 cryptocurrencies that's already existing therefore while managing, monitoring and measuring risks the investors need to consider the differences in the features across all the other cryptocurrencies.

The most used crypto, Bitcoin has a simple construct having functions replicating with that of gold and money whereas the second prominent crypto Ethereum. Ethereum, goes beyond the core function of Bitcoin and adds to more self-executing and complex capabilities that are used to electronically duplicate complex transactions, financial instruments and performance contracts. Ethereum is also used to create exchanges. This arena meets further complications by specifics that are associated with the governance and issuance of cryptocurrencies. For example: the responsibility of transactions validation and tracking are divided equally between cryptocurrencies users and issuers Also, cryptocurrencies like stablecoin who are pegged to another fiat currency in order to regulate its value. (Singh D., 2020).

- **Valuation Difficulty:** Investors while managing the risk of any financial instruments, the very first step is to determine and quantify the instrument's exposure on using the customary whole market methodologies. But in the case of cryptocurrencies the valuation approach is not clearly defined, there is no mutually accepted metrics also the information on reported pricing may also differ from one place to another. For the risk managers to determine a rational value of any cryptocurrency, they need to increase the use of complex and inconsistent valuation approach(occasionally).
- Some investors address these valuation challenges from a practical perspective on using cryptocurrencies as circulating currency or fiat money such as EUR or USD. But this perspective stands on a twisted assumption that suitably passes through legal and fundamental differences between traditional financial instruments and cryptocurrencies. The most prominent valuation technique of cryptocurrency is the estimation of crypto consumers market or the latest market capitalization of every cryptocurrency. Yet, this technique doesn't address the potential and actual values that cryptocurrencies create by the way they're used. Accordingly, some investors are

one step ahead by estimating value of cryptocurrencies from a network perspective. Evaluating the possible number of crypto users and forecasting a series of foreseeable scenarios of usages based on governance features and programmability structure.

Other institutional analysts value these electronic assets based on electricity consumption costs. The electricity is a very essential part in maintaining a large chunk of blockchain data. It is used to verify, create and store different types of cryptocurrencies. These kinds are valuations offers certain comparable standardization while considering defining and underlying features of different cryptocurrencies. Yet they can be deranged by far-differencing costs of electricity across major centers of mining. (Singh D.,2020)

- **Legal and Regulatory dilemmas:** Cryptocurrencies, unlike financial instruments, are not regulated items, and contains no benefits from the legal standard protection provided to trade financial instruments. This in turn results in complicated legal risks and brings uncertainty, which has significant influence on both risk management and invest ability for these electronic assets.

Internationally there is still no agreement as to how to regulate cryptocurrencies. Majorly on trading and policing of product development. Most of the countries like China has banned owning, selling and trading in such unregulated digital assets. Some countries in the middle east have concerns regarding the regulatory policies and hence have not fully accepted all the cryptocurrencies. Other developing countries are looking forward for a wide-ranging standard of regulations for trading, issuance, transparency and issuance. From a different perspective, cryptocurrency's basic legal protection is the test of its potential while on the other hand the lack of steady regulations helps the asset in sustaining the regulatory challenges and legal compliance that the comes in their way. Risk takers must know that investing in different types of cryptocurrencies can be unusually complex and may have both compliance and legal hazards. (uktechnews, 2021).

- **Modelling and data obstacles:** Managers of risk who are modelling risks and exposures of future cryptocurrencies, currently might not have to required data. In fact, when the data is inadequate, it limits an individual's ability to create a model based on the factors that drives cryptocurrencies returns and risks, and to determine basic metrics measurements like VaR, Stress Test and ES.

Cryptocurrencies are highly volatile in nature and are available 24/7 for trading worldwide. The narrow but detailed data set which contains the actual prices of transactions that the crypto markets provide looks not adequate for the purpose of modelling. Since we are far away from a mutual agreement on return, price or equilibrium function for crypto, forecasting and modelling such electronic assets is as good as a guessing game. This is the reason why risk takers use statistical tools while modelling their cryptocurrency exposures and while identifying factors that can be used into trading models and pricing risks. Although these pricing models are not real and

their usefulness for stress testing purpose is yet under discussion. (uktechnews, 2021).

- Trading and Liquidity costs: In comparison to regular markets, the bitcoin market is often less liquid and more expensive. Because the supply of many cryptocurrencies is restricted, with fresh units released on a pre-determined schedule, it should come as no surprise that cryptocurrency prices are very volatile.

There is also no consistency in how bitcoin trading is handled. Some exchanges replicate the main characteristics of electronic trading platforms, while others embrace the inherent qualities of cryptocurrencies. Risk managers must consequently be familiar with the mechanics of certain trading venues. Cryptocurrency markets are struggling with high volatility and limited liquidity, making price discovery more effective is still a challenge. One more problem faced in this market is Gapping. Gapping means investors are not having the ability to come out or change their cryptocurrency positions. Adding to the further complications, there are increasing evidence that some exchanges manipulate prices daily, large front-run trades and trade against customers. (Went, 2021)

VI. SUSTAINABILITY OF BITCOIN AND BLOCKCHAIN

- The desire to mainstream bitcoin will almost certainly speed up research in lowering the price of storing renewable energy. Furthermore, governments' first steps toward making bitcoin a legal tender could lead to great thought-out laws for cryptocurrency mining and penalties for environment violations (Singh, 2021).
- To rebut observers of cryptocurrencies, one common argument is that traditional money has a high carbon impact as well. Fiat money has a secondary impact due to the maintenance of thousands of branches of bank, staff utilizing fossil-fuel based transportation to go to their office, and over 35 lakhs ATMs throughout the world sucking up power 24 hours a day, seven days a week. (Mickael, 2020)
- Bitcoin, like other cryptocurrencies, is in the early stages of development and will take several years to mature. It will become closer to being ecologically friendly, especially with the impetus from recent innovations. The technology will eventually reach a point of equilibrium, allowing it to gain greater acceptability and pushing policymakers to integrate it with older monetary systems. We could be just a few regulatory steps away from increasing cryptocurrency's use of green energy. (Mickael, 2020)
- The evidence on the ground is equally convincing in favor of making Bitcoin legal. It's already a low-cost option for international transactions, and major central banks are leading the charge by permitting cryptocurrency

exchanges to act as "transfer and remittance firms." (Mickael. 2020)

- China provided 75% of global bitcoin mining capacity, banned them in June. According to commentators, one reason for the crackdown is that China is risk adverse and may wish to stay away from anything that could obstruct the implementation of the digital yuan on a permissioned blockchain. The more probable reason is that bitcoin mining is delaying China's objective of becoming carbon-neutral by 2060 (Mickael, 2020).

VII. CONCLUSION AND WAY FORWARD

Cyber security and illegal activities were considered to be the most significant problem in Bitcoin adoption, followed by government control and volatility. The scope of money laundering is likely high in cryptocurrency due to the lack of intervention of government and individual anonymity. The acceptance of bitcoin is a big problem, and many people are concerned of being robbed, but the truth is that if we can grasp bitcoin, we can enhance our economy. To alleviate these shortcomings, the emergence of a government regulating body and a proper platform must be emphasized. The Reserve Bank of India prohibited banks and other authorized financial companies from engaging with clients that dealt in cryptocurrencies such as bitcoin in 2018. The RBI's order was overturned by the Supreme Court in 2020. The Indian panel will make recommendations on how to solve concerns such as crypto literacy, consumer rights, and financial fraud, rather than evaluating the state of cryptocurrencies.

This has helped to dispel some of the confusion regarding cryptocurrencies' legal status, resulting in a surge in trading volumes. In spite of constraints imposed by the Government and the Central Bank, Bitcoin and other cryptocurrencies have grown swiftly in India. As per some statistics, more than 100 million Indian's possess cryptocurrencies, making India the country with the most Bitcoin owners in the globe. For a large number of investors, demonetisation paved the path for crypto investment. In terms of value and volume, Google reported that Indian Bitcoin searches had surpassed prior searches. (Mohd Yousuf Javed, 2020)

Based on our research and the responses received in our survey we can infer that most of the individuals prefer Bitcoin over the other cryptocurrencies and many possess master's degree in their highest qualification. 90% of them are tech savvy, which helps to understand the mechanism of cryptocurrencies better as Bitcoin is dealt electronically. Upon analysing the responses, a very few individuals believe that there is no future of cryptocurrency reason being that the crypto market is highly volatile and is prone to losses and also as per the recent budget there is a new taxation policy that is 30% applicable on investments in cryptocurrencies and this would push people away from investing in crypto due to high taxes and prefer to invest in other securities. However, there have been majority of responses who have been interested in Bitcoin and think that cryptocurrencies do have a future. The reason for opting Bitcoin was that it has been existing in the

market for a very long time and has become one of the most popular cryptocurrencies. It has already developed in the market and has huge and strong consumer base. The volatility in this currency is comparatively lesser than other currencies. It is one of the most desired crypto currency all over the world. Hence we can conclude that, Bitcoin been existing in the market and is considered to be one of the best, reliable and preferred crypto currency over the world.

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