

Bitcoin - A Boon to Economy or Bane to Sustainability

OPEN ACCESS

Rajani B Bhat

Assistant Professor, PG & Research Department of Commerce
The Cochin College, Kochi, Kerala, India

Volume: 7

Issue: 4

Month: October

Year: 2019

P-ISSN: 2320-4168

E-ISSN: 2582-0729

Received: 21.07.2019

Accepted: 17.09.2019

Published: 01.10.2019

Citation:

Bhat, Rajani B. "Bitcoin - A Boon to Economy or Bane to Sustainability." *Shanlax International Journal of Commerce*, vol. 7, no. 4, 2019, pp. 42-47.

DOI:

<https://doi.org/10.34293/commerce.v7i4.598>



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License

Abstract

Since the formation of Bitcoin in 2009, various private digital currencies have been presented. Bitcoin is by a long shot the best one. It has been getting a great deal of media consideration, and its all out market worth has arrived at 20 billions USD in March 2017. More importantly, a number of central banks started recently to explore the adoption of cryptocurrency and blockchain technologies for retail and large-value payments. Bitcoin is a digital currency based on a peer-to-peer payment system managed by an open source software and characterized by lower transaction costs, greater security and scalability than fiat money and no need of a central bank. In spite of criticisms about illegal uses and social consequences, it is attracting the interest of the scientific as well as economic community. Be that as it may, notwithstanding Bitcoin's worth, the paper clarified, physical stores have been delayed to acknowledge it as a technique for installment. Subsequently, a few onlookers are getting to be critical about whether this tech-trendy person digital money, which everybody has known about however the vast majority don't genuinely comprehend, will ever supplant conventional cash. Only one exchange can use as much vitality as a whole family unit does in seven days, and there are around 300,000 exchanges each day. That vitality request is usually met through petroleum product vitality sources, which, alongside contaminating air and water, radiate ozone harming substances that reason environmental change. At the end of the day, Bitcoins are adding to the warming of the climate without giving a noteworthy open advantage consequently. Some Bitcoin lovers guarantee that it will in the long run become a standard money, and that the cryptogovernance framework whereupon it's manufactured could really support the earth. In any case, the Bitcoin market is unstable, its future dinky. Off-the-rack PCs used to be incredible enough to mine Bitcoins. Presently, on the grounds that the math issues are so perplexing, they should utilize particular equipment called Application Specific Integrated Circuit, or ASIC. These mining machines are huge and run hot, and the individuals who use them—either Bitcoin mining organizations or Bitcoin devotees cooperating—utilize a great deal of power to do as such. Organizations and associations that mine bitcoin will once in a while have a huge number of these machines pressed into far reaching distribution centers. Hence, the present study is an attempt to define and evaluate the current trends of the literature concerned with the sustainability of bitcoin, considering the environmental impacts and economic aspects. The study is divided into four parts – first part explains the concept of bitcoin in detail with its history. The second part of the study details the statement of the problem. The third part deals with results and discussions and the last is the concluding part. In the results and discussion part, the data dealing with trends in the value of bitcoin in USD and in Indian markets are exhibited. The main exchanges dealing with bitcoin in India are then given and the number of bitcoins available and their market capitalisation worldwide is shown.

From the analysis, it is very clear that the value of bitcoin has tremendously increased over the period of time. One of the main allegations against the bitcoin trading is its fluctuating volatility depicted. It's because of this issue, that bitcoins are considered to be very dangerous commodity to be traded. Also, from the point of sustainability, it emerges that the transition of the whole monetary system in the new cryptocurrency will result in an unacceptable amount of energy consumed to mine new bitcoins and to maintain the entire virtual monetary system, and probably bitcoin will remain a niche currency.

Keywords: Bitcoin, Cryptocurrency, Environmental Impact, Sustainability.

Introduction

Since the introduction of the first IBM personal computer in 1975, and later in 1993 with the diffusion of the internet, technology entered homes and spread widely over the world as a new digital revolution that brought sophisticated and distant technologies within everyone's reach. The introduction of bitcoin in 2009 seems to represent a new starting revolution in the way money exchanges happen and the occurrence of value creation.

Bitcoin can be considered as the next stage in the process of money evolution: an electronic money in no way connected to the objects of the material world, with several advantages when compared to other forms of money. Bitcoin is a digital currency, a type of installment that utilizes cryptography to control its creation and the executives, instead of depending on focal specialists. Bitcoin is an advanced money dependent on an installment framework that depends on a distributed system made as an open source program in 2008 and propelled in 2009 by an engineer named Satoshi Nakamoto, yet this might be an alias which another individual or gathering may cover up. The creation and move of this virtual money is made under cryptographic associations therefore Bitcoin is additionally alluded to as "digital currency".

Bitcoin – A Journey since Inception

The world has seen radical headways in cryptography and figuring control in the course of the most recent couple of decades and with this progression has come another type of cash, digital currency. Bitcoin, created in 2009, has turned into the vanguard of digital forms of money and is the most reasonable and most generally embraced to date. The innovation works through a circulated system of wallets and hubs and gives quicker, less expensive, borderless exchanges just as complete namelessness whenever wanted.

A digital currency is a mechanism of trade that utilizes cryptography to deal with the production of new units just as secure the exchanges. These are a subset of advanced monetary standards. One of the most striking highlights of cryptographic money is that it gets rid of the requirement for a confided in outsider, for example, a legislative office, bank and

so forth. The cryptographic money framework all in all makes the units. The rate at which such units are made is characterized in advance and is freely known not at all like the conventional monetary standards where the legislature or the approved banks control the inventory. The principal framework on which most cryptographic forms of money are based today was made by Satoshi Nakamoto.

The creation of most cryptographic forms of money is stooped to bit by bit decline, in the long run putting a top on the quantity of units that will ever be available for use. This can lead the cash to impersonate the shortage that is generally found in the stock of valuable metal, therefore maintaining a strategic distance from hyperinflation. The cryptographic forms of money today, are pseudo-mysterious, however fresher monetary forms like Zerocoin have been recommended to take into account total namelessness. Moreover, not at all like banks and governments which can print more cash at whatever point they esteem fit, the bots that are right now making Bitcoin should quit doing as such in or around the year 2140 as per their programming itself.

In contrast to fiat monetary forms, whose worth is determined through guideline or law and endorsed by the state, Bitcoin infer their incentive through the basic standards of free market activity – they have no characteristic worth and no sponsorship, and their worth depends totally on what individuals are happy to exchange for them. Thus, no confidence or trust towards the financiers or lawmakers was required if there should be an occurrence of Bitcoin, however just in Nakamoto's well-structured calculations. Not just the open record of Bitcoin, for example the 'square chain' appeared to battle off misrepresentation, yet in addition kept the cash supply of Bitcoin developing at an anticipated rate because of the prearranged arrival of the virtual money.

The Bitcoin system appeared with the arrival of open source Bitcoin customer and with the issuance of the first Bitcoin. Satoshi mined the initial 50 Bitcoins which are broadly known as the "Beginning Block". Around the same time the swapping scale of Bitcoin was first distributed by freedom standard at \$1 for 1,309.03 BTC. Inside several years, around February 2011, Bitcoin accomplished dollar equality and was presently being acknowledged everywhere

throughout the world as a method of installment for a plenty of items.

Nakamoto had made the principal working cryptographic money, making it as not quite the same as the current fiat monetary forms as could be expected under the circumstances. It was intended to be an option in contrast to them, another technique for exchange, totally free of government control, and, maybe a test to it. It was to challenge the administrations, to make individuals reexamine the current financial frameworks, to scrutinize their confidence in it. As per Nakamoto, Bitcoin is a product based online installment framework and presented as open-source programming in 2009.

The mechanism of creation, distribution and maintenance is not managed by a central bank, but is decentralized in a worldwide community sharing a peer-to-peer connection and using a software that manage exchanges like a digital wallet. The transfer of currency from one wallet to another is simply an exchange of digital bits without involving paper, coins, credit or debit cards, bank accounts, security accounts and no collateral. In addition, bitcoins rely on dedicated rigs of personal computers, mining for new coins through a series of tasks that require considerable computational power.

The vast majority of the monetary standards on the planet at present, including the hold monetary standards, are fiat monetary standards. The term 'fiat monetary forms' alludes to monetary standards that are issued by a legislature, and the administration vows to pay the holder of such monetary standards an identical sum in gold, if necessary. Therefore, these monetary standards as a rule have a focal administrative body which issues them, and are thus called 'brought together'.

Installments are recorded in an open record utilizing its own unit of record. At the point when the calculation was made by Nakamoto, a limited cutoff of 21 million on the quantity of Bitcoin that could ever exist was set. 27 Currently, more than 12 million are in circulation. 28 The quantity of Bitcoin mined has soar since 2009. The framework was expected to be set up in a manner where the trouble of mining each next Bitcoin is more noteworthy than the past one. The last Bitcoin will be mined in the year 2140, at the present rate.

Statement of the Problem

The possibility of an advanced cash – convenient and intangible, liberated from the supervision of banks and the administration has been one of the most examined and strived for thoughts since the approach of the cutting edge web. Numerous recommendations for such a cash were coasted yet none were fruitful. There has come an adjustment in situation with the appearance of digital forms of money.

Digiconomists anticipated bitcoins as the eventual fate of cash. Be that as it may, much advertised digicurrency at long last wound up with heaps of issues-from the overwhelming instability in its costs to a risk to the earth. The focal point of earlier research and consideration has been on the general idea of bitcoin, its capacity to evade monetary foundations in created countries. Anyway the vulnerability encompassing bitcoin's future and its wild unpredictability have been significant obstructions to far reaching selection in the created world. Hence, this much debated issue is to be taken for further discussion,

Research Design of the Study

The present paper is an attempt to understand the nuances of bitcoin and to study the implications of usage of bitcoin on environmental suitability. The study is descriptive in nature. The data for the study has been collected form secondary sources mainly comprising of related literature, articles and newspapers clippings.

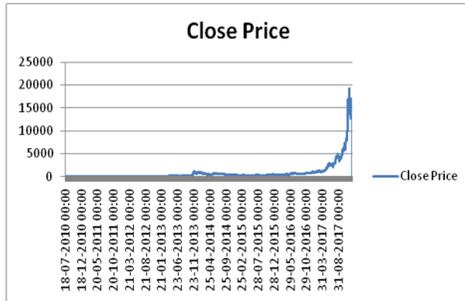
Results and Discussions

Bitcoin Pricing

Since evaluating in bit coin exchanges is request based, it is particularly unstable. Volumes of exchanging happen each second. The cost of a piece coin is to a great extent subject to the exchanging for example request and supply factors. More the interest, higher is the cost. The costs stayed under the scope of US\$ 300 until late 2015 In the next year, around June 2016, in a positive hunch, the value rose to US\$ 755. After March 2017, the costs have just expanded. In 2017, Bitcoin's circumstance changed fundamentally. On January 3, its value transcended \$1000 just because. Its cost had multiplied by May,

and again by August. By November, it was worth near multiple times its incentive in January 2017. It outperformed \$11,000 just because on November 29 2017. 2017 is the year bitcoin went stratospheric.

Fig 1 Pricing of Bitcoin over the Years



Source: <http://www.coindesk.com/price/>

Bitcoins in Circulation

Table 1 No of Bitcoins in Circulation

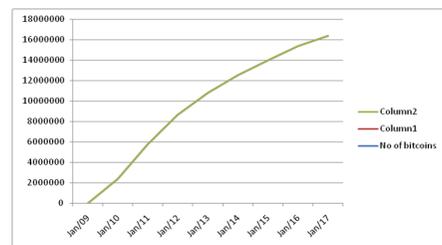
Year	No of bitcoins users
Jan 2009	50
Jan 2010	2,412,050
Jan 2011	5,789,650
Jan 2012	8,679,850
Jan 2013	10,852,050

Jan 2014	12,547,050
Jan 2015	13,964,850
Jan 2016	15,371,475
Jan 2017	16,377,437

Source: www.unocoin.com

Table 1 depicts the total number of bitcoins users since its inception. The graph when plotted using this table, clearly shows a rise in the usage. Since 2009 till March 2017, the quantity of bitcoins available for use has just expanded. The figure has come to an unequalled high 16,377,437 in number.

Fig 2 Bitcoins in Circulation



Market Capitalisation of Bitcoins

Market capitalization of bitcoin as on 8 June 2017 has been figured to come up at US\$ 46,476,054,493, while the most extreme inventory in the market is constrained to 21,000,000 BTC starting at now.

Table 2: Market Capitalisation of Bitcoins

Market Capitalisation	Volume 24h	Circulating supply	Maximum Supply
\$46,476,054,493	\$1,629,280,000	16,377,437 BTC	21,000,000 BTC
(16,377,437 BTC)	(578,813 BTC)		

Source: <https://coinmarketcap.com/currencies/bitcoin/>

Major Exchanges Operating in India

India has seen a positive development in the digital money advertise opposite different nations. In accordance with ongoing development in the worldwide markets, bitcoin trades in India are especially operational and fruitful. Their

plans of action go from essential exchanging stages to complete specialist co-ops. The sort of administrations being offered in the present market is recorded in one of the above sub-themes (supra).

Listed below are some of these exchanges that have made it big in the industry:

Table 3 Exchanges in India Trading in Bitcoin

Name of the Exchange	Name of the Company Promoting the Platform	Brief of Company Structure	Date of Set-up of Exchange	Date of Formation of Company	Website	Location(s)
Coinsecure	Secure Bitcoin Traders Pvt Ltd	company set up as a private company in India	N/a	2014	coinsecure.in	Delhi, India

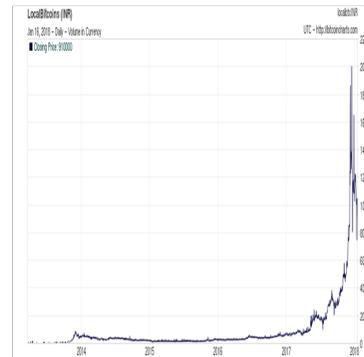
Bitxoxo	Bitxoxo Bit-coins Online Pvt Ltd	company set up as a private company in India	N/a	2016	bitxoxo.com	Warangal, Telangana, India
Unocoin	Unocoin Technologies Pvt Ltd	company set up as a private company	2013	2015	unocoin.com	Bengaluru, Karnataka, India

Source: Bitcoins India Report, 2017

Volumes of Trading in Bitcoins

Nearby Bitcoins is a universally prestigious bitcoin trade, basically utilized for exchanging purposes by clients round the globe. Introduced in outline 6.2 above is information displaying volume of exchanging bitcoins in Indian Rupee (INR) in the given trade since the start till June 27, 2017. As on the date, the total volume in exchanges is identical to nearly INR 2.5 million. Obviously, high exchanging volumes can be discovered in late 2015 contrasted with pre 2015, anyway the numbers lessen and afterward proceed onward a typical pace while bit by bit expanding up to the start of the year 2017, where over the top exchanging is clear. Exchanging came up anomalous in the year 2017 in India and wherever else as well.

Fig 3 Trading Volume in Local Bitcoins in INR



Countries that have Legalised Bitcoins

The greater part of the all out number of nations on the planet have taken a positive remain on managing bitcoins. A table underneath shows a rundown of certain nations which have sanctioned bitcoins.

Table Countries which have Legalized Bitcoins

Country Name	Legal Status	Official source
Japan	In the process of legally recognizing as money	http://www.fsa.go.jp/news/28/ginkou/20170324-1.html
Australia	Proposed in budget speech 2017-18 to treat bitcoins as money	http://www.budget.gov.au/2017-18/content/glossies/factsheets/html/FS_innovation.htm
European Union	Convertible decentralized virtual currency	http://www.ecb.europa.eu/pub/pdf/other/virtualcurrencyschemes201210en.pdf

Source: Bitcoins India Report, 2017

Environment Sustainability of Bitcoins

Bitcoin is based on the “blockchain technology” which relies on highly secure cryptographic algorithms and sophisticated peer-to-peer technologies, which poses a challenge to both the usability and diffusion of bitcoins. The environmental sustainability of bitcoins is a controversial question as the system has been built in a way almost like the mining of a natural resource: costs and efforts rise as the system reaches the ultimate resource limit. The mining of new bitcoin requires more and more

hardware resources necessary to mine each bitcoin when approaching the capped limit of the bitcoin system.

Bitcoin mining consists in the addition of a pool of valid transactions in the blockchain validated by each node. Once a node has collected a number of valid transactions in a block, the node computes a cryptographic hash of that block to comply with a definite constraint. To find a hash the meets the constraint is a computing-intensive task. The system is elastic as the number of attempts required to find

a valid hash varies depending upon the computing capacity of entire network, but it is regulated to require an average of ten minutes to generate a new valid block and reward the miners. The rate of emission of bitcoins, called bitcoin mining has an inflexible algorithmic limitation starting from zero and increasing rapidly but the increasing rate slow down constantly: after the issue of 10.5 million bitcoins, its emission rate will decrease by half, after 15,750,000 bitcoins, the emission rate will halve and so on, reaching a limited capped value of the total bitcoin amount of 21 million. At present, there are about slight over 16 million bitcoins mined.

Mining of a bitcoin or one exchange can use as much vitality as a whole family unit does in seven days, and there are around 300,000 exchanges each day. That vitality request is as a general rule met through non-renewable energy source vitality sources, which, alongside dirtying air and water, transmit ozone depleting substances that reason atmosphere change. In different words, Bitcoins are adding to the warming of the environment without giving a noteworthy open advantage consequently. Some Bitcoin fans guarantee that it will in the long run become a standard money, and that the crypto governance framework whereupon it's constructed could really support nature. Be that as it may, the Bitcoin market is unstable, its future dinky. Off-the-rack PCs used to be ground-breaking enough to mine Bitcoins. Presently, on the grounds that the math issues are so mind boggling, they should utilize particular equipment called Application Specific Integrated Circuit, or ASIC. These mining machines are enormous and run hot, and the individuals who use them—either Bitcoin mining organizations or Bitcoin aficionados cooperating—utilize a ton of power to do as such. Organizations and associations that mine bitcoin will some of the time have a large number of these machines pressed into far reaching

distribution centers.

Conclusion

Bitcoin has been condemned for its vitality use for quite a long time. In 2013, Bloomberg regarded it "a genuine ecological fiasco," affirming that the mining procedure utilized \$150,000 worth of power a day. Analysis has become more intense as more coins have been mined—from around 11 million out of 2013 to almost 17 million as of late. Since 2015, Bitcoin's power utilization has been high contrasted with traditional advanced installment techniques.

Bitcoin is winding up increasingly significant, yet just to individuals who consider it to be a savvy - or entertainingly unsafe-venture. The vast majority use Bitcoins as an approach to profit, instead of utilizing it as cash itself. As it were, purchasing a Bitcoin is the same than putting resources into an eccentric stock on NASDAQ, yet the expense to the planet is vastly more awful. As it neglects to address one cultural sick, it's contributing an amazing add up to another.

References

- Bitcoins – A Global Perspective*, Nithin Desai Associates Indian Legal and Tax Considerations, 2015.
- Krause, M. *Bitcoin: Implications for the Developing World*. CMC Senior Theses, 2016, Paper 1261.
- Shane, D. "Bitcoin boom may be a disaster for the environment." *CNN Business*, 2017.
- Krause, M. "Bitcoin: Implications for the Developing World." Claremont McKenna College, 2015.
<http://vinodkothari.com/bitcoin/>
<https://bitcoincharts.com/charts>
<https://coinmarketcap.com/currencies/bitcoin/>
<http://www.coindesk.com/price/>

Author Details

Dr. Rajani B Bhat, Assistant Professor, PG & Research Department of Commerce, The Cochin College, Kochi, Kerala, India, *Email ID:* rajanispai@gmail.com