



*Thakur Educational Trust's (Regd.)*  
**THAKUR COLLEGE OF SCIENCE & COMMERCE**

AUTONOMOUS COLLEGE AFFILIATED TO UNIVERSITY OF MUMBAI  
NAAC Accredited with Grade 'A' (3<sup>rd</sup> Cycle) & ISO 9001: 2015 Certified  
**Best College Award by University of Mumbai for the Year 2018-2019**



**CELEBRATING**  
**25 YEARS OF GLORY**

**Evolution Of Cryptocurrencies:  
Effects On Consumer Demand**

University of Mumbai



**A Project Submitted to**

**University of Mumbai for partial completion of the degree of**

**Bachelor of Banking & Insurance**

**Under the Faculty of Commerce**

**By**

**Darren Aloysius**

**Under the Guidance of**

**Ms. Ella Gaglani**

**Thakur College Of Science And Commerce**

**Shyamnarayan Thakur Marg , Thakur Village, Kandivali- (E),**

**Mumbai, Maharashtra-400101**

**2020-2021**



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**Certificate**

This is to certify that Ms/Mr Darren Aloysius has worked

And duly completed her/his Project Work for the degree of Bachelor of Banking & Insurance under the Faculty of Commerce in the subject of

Research Project and her/his project is entitled,

“ Evolution Of Cryptocurrencies: Effect On Consumer Demand ”

under my supervision.

I further certify that the entire work has been done by the learner under my guidance and that no part of it has been submitted previously for any Degree or Diploma of any University.

It is her/ his own work and facts reported by her/his personal findings and investigations.

## ***Acknowledgement***

To list who all have helped me is difficult because they are so numerous and the depth is so enormous.

I would like to acknowledge the following as being idealistic channels and fresh dimensions in the completion of this project.

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**Abstract: -**

Cryptocurrency is a highly evolved blockchain technology application that is currently a very popular topic in the entire world. The public availability of transaction histories, provided by the cryptocurrency ledger, offers an opportunity to analyse and compare different cryptocurrencies and also view their effects on consumer demand.

Bitcoin was not the first attempt at a crypto currency, but it has been the most well established and it is now being accepted and understood by a number of people. Cryptocurrency is a digital currency that operates as a peer-to-peer network. It is highly secure due to the cryptographic algorithms and instead of governments, its controlled by technology and has the potential to become a major means of payment for e-commerce and may even be a challenge to the traditional means of money providers. Instead of being used by only one country or some countries, crypto serves the entire world

For the common consumers, crypto offers a cheaper, faster and secure peer-to-peer transaction options, than those offered by the usual money service businesses. The user doesn't have to provide personal details as well as crypto is transferred through a wallet address. While cryptocurrencies continue to gain some recognition as a payment option, price volatility and the opportunity for speculative investments convince consumers not to use cryptocurrency to purchase goods and services but rather to trade it as a peer-to-peer transaction. However, as the influence of crypto is increasing throughout the world, cryptocurrencies are picking up the pace and are being used by an increasing number of consumers day by day.

**Keywords: -** Blockchain; Cryptocurrency; peer-to-peer; secure; potential; consumer.

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# 1. Introduction

## 1.1] Introduction To Blockchain:



A blockchain is largely an allotted database of facts or public ledger of all transactions or digital events that have been carried out and shared among collaborating parties. Every transaction within the public ledger is proven via consensus of a majority of the individuals within the system. And, once entered, records can in no way be erased. The blockchain includes a sure and verifiable report of every single transaction ever made. To use a simple analogy, it is easy to take a cookie from a cookie jar, stored in a secluded area than stealing the cookie from a cookie jar kept in a market region, being observed by lots of people. Bitcoin is the most famous example that is intrinsically tied to the blockchain era. It's also the most debatable one because it allows to permit a multibillion-dollar worldwide market of anonymous transactions without any governmental control. For this reason, it has to cope with some of regulatory troubles involving national governments and monetary establishments. However, the blockchain era itself is non-controversial and has worked perfectly through the years and is being efficiently implemented to both monetary and non-economic global packages. Marc Andreessen, the doyen of Silicon Valley's capitalists, indexed the blockchain allotted consensus model as the most essential invention after the internet itself. Johann Palychata from BNP Paribas wrote in the Quintessence magazine that bitcoin's blockchain, the software program that lets in the virtual currency to function, should be considered as an invention just like the steam or combustion engine that has the ability to transform the entire world of finance and beyond. Cutting-edge virtual economy is based on the reliance on a certain trusted authority.

Our all internet transactions rely on trusting a person to inform us the fact that it could be an electronic mail service company telling us that our e mail has been brought; it can be a certification authority telling us that a positive virtual certificate is authentic; or it could be a social community including Facebook telling us that our posts concerning our lifestyles events had been shared only with our pals or it can be a bank telling us that our money has been brought reliably to our near and dear ones in a remote continent. The fact is that we stay our life precariously inside the digital world by means of relying on a 3rd entity for the security and privacy of our virtual property. The reality stays that those assets may be hacked, manipulated or compromised. That is wherein the blockchain technology comes accessible. It has the capacity to revolutionize the digital world through permitting a dispensed consensus where every and every online transaction, beyond and present, concerning digital property can be tested at any time in the future. It does this without compromising the privateness of the virtual belongings and parties involved. The allotted consensus and anonymity are two important traits of blockchain technology.

The blessings of Blockchain technology outweigh the regulatory problems and technical challenges. One key use case of blockchain technology entails “smart contracts”. Smart contracts are basically computer programs which can robotically execute the terms of an agreement. While a pre-configured circumstance in a smart settlement amongst collaborating entities is met then the parties concerned in a contractual agreement may automatically make payments as per the contract in a transparent way. Smart Property is another related idea which is concerning controlling the ownership of a property or asset via blockchain the use of smart Contracts. The belongings may be physical such as vehicle, residence, telephone etc. Or it can be non-bodily including stocks of a company. It has to be mentioned right here that even Bitcoin isn't always simply a forex--Bitcoin is all about controlling the ownership of cash. Blockchain generation is locating programs in extensive variety of regions—each financial and non-monetary.

Financial institutions and banks no longer see blockchain generation as risk to standard enterprise fashions. The world's biggest banks are in reality searching out possibilities on this vicinity by way of doing studies on modern blockchain programs. In a latest interview Rain Lohmus of Estonia's LHV financial institution advised that they located Blockchain to be the maximum examined and comfy for some banking and finance associated programs. Non-Financial applications opportunities also are infinite. We can envision putting proof of existence of all legal documents, fitness facts, and loyalty bills inside the track industry,

notary, private securities and marriage licenses in the blockchain. Via storing the fingerprint of the virtual asset as opposed to storing the virtual asset itself, the anonymity or privateness goal can be accomplished. On this document, we cognizance on the disruption that every industry in these day's virtual economic system is facing nowadays due to the emergence of blockchain technology. Blockchain technology has capacity to end up as the new engine of the virtual economic system wherein we are an increasing number of the usage of net to behaviour digital trade and proportion our non-public facts and existence activities. There are tremendous possibilities in this area and the revolution in this space has simply all started.

## 1.2] What is Cryptography?

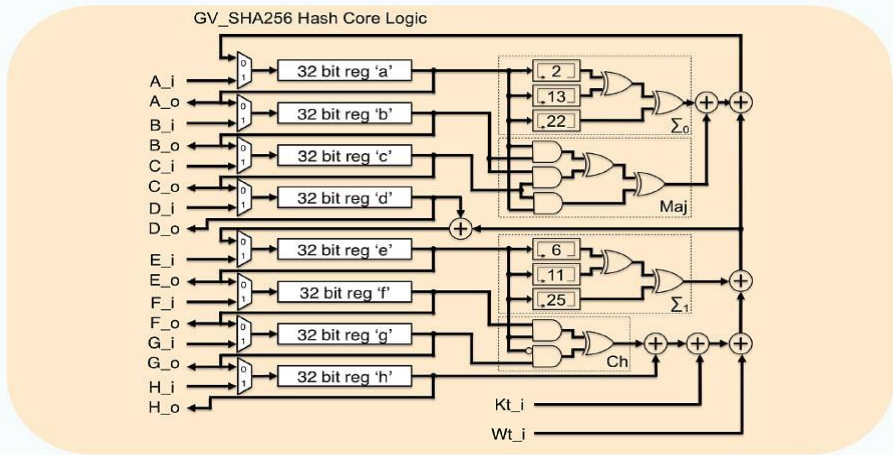


Cryptography is a method of using encryption and decryption to secure communication inside the presence of people with an alternate motive—that is, third parties who want to steal your information or snoop on your conversation, can't do it. Cryptography makes use of computational algorithms along with SHA-256, which is the hashing set of rules that Bitcoin makes use of; a public key, which is sort of a virtual identity of the consumer shared with all of us; and a non-public key, that's a virtual signature of the consumer that is kept hidden.

### **Cryptography in Bitcoin Transactions:**

In a normal bitcoin transaction, first, there are the transaction information: whom you want to ship the bitcoins to and how many bitcoins you want to send. Then the records are handed through a hashing algorithm. Bitcoin, as referred to, makes use of the SHA-256 algorithm. The output is then exceeded through a signature set of rules with the user's personal key, used to uniquely become aware of the user. The digitally signed output is then distributed throughout the network for different customers to affirm. This is accomplished by the usage of the sender's public key.

The users who check the transaction to see whether it's valid or now not are called miners. After this is accomplished, the transaction and several others are added to the blockchain.



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### **1.3] About Various Cryptocurrencies:**



What are cryptocurrencies? With the arrival of cutting-edge cryptography, the idea that information can be physically real — and treasured — has moved from the dingy halls of philosophy departments to the concrete world of enterprise. We're all acquainted with the financial interest enabled by way of secure communication: negotiations, contracts, transactions, income and commands may be sent on the public internet with no worry of forgery or interception. We also are acquainted with the economic effects when some information is misplaced or stolen. Seeing that the appearance of cryptographic forex with Bitcoin in January 2009 this notion of valuable data has been made concrete. It's far viable to preserve and trade a fungible store of value, using public communication media, with cryptographic in place of physical security preventing fraud or robbery. Rather than saying “this encryption secret is really worth \$10,000 because that’s what it will cost us if its encrypted data is uncovered” you can still say “this key's worth \$10,000 however can be broken up, sending only \$20 of it to another party while retaining the rest”. A cryptocurrency is this sort of cryptosystem, designed to facilitate the transfer of scarce items described in the system itself. The prototypical instance is Bitcoin, which transfers signing authority and maintains a global ledger of price associated to this authority. The primary innovation of Bitcoin was the creation of this ledger, that is updated and demonstrated in a very decentralized fashion, with all events agreeing on the atomicity of transactions and their ordering in time. Out of necessity, cryptocurrencies are huge cryptosystems and incorporate many smaller cryptosystems as components. This makes them fearsomely complex, and their safety correspondingly difficult to confirm, however the fact that Bitcoin has held up for over

five years offers proof that this complexity can be controlled. Including to the complexity of the cryptosystem itself is the truth that replacing value always involves monetary considerations. Consequently, cryptocurrencies should be analysed not only for computational soundness and protection, but also for financial soundness and protection. That is, is the cryptocurrency designed in order that the incentives are aligned with the intention of protection of the gadget, and no longer with the aim of undermining it? To demonstrate the complexity of Bitcoin, and to offer a top-level view of its workings, we've broken the cryptosystem down into its constituent algorithms. The cryptosystem in its entirety is administered by validating "full" node at the network. We anticipate the lifestyles of a communications network by way of which nodes are able to change records. (In practice, Bitcoin nodes use a peer-to-peer network, and communicates via the "Bitcoin protocol".) This type of breaking-down is always subjective and offers an incomplete view of the system, but is didactically essential. It's far critical to emphasize that it is one cryptosystem and the safety (financial and computational) of every factor is tied to that of every different. Consequently, each person hoping to exchange a single element must recognize the whole machine and feature the technical heritage to analyse and enforce the exchange. We now give a top-level view of everything of Bitcoin, leaving unique cryptographic discussion to future sections Setup. While a Bitcoin node is first started it creates information structures, a weighted hash tree called the blockchain and a database referred to as the utxo set, both of which are initially empty. Elements of the blockchain are referred to as blocks; elements of the utxo set are referred to as utxos or unspent transaction outputs. The motivation for these terms becomes clear. It then contacts any other node to request the highest-weighted route in its blockchain. For every block on this direction (which have to begin with the so-called genesis block whose hash is hardcoded into the node), the node runs its Block Verification set of rules, which updates its chain state Relay. On every occasion a node sees a transaction at the community, it runs its Transaction Verification set of rules. If this passes, the node passes the transaction to every of its peers (after a small delay, to prevent flooding attacks). Further, each time a node sees a block at the network, it runs its Block Verification algorithm. If this passes, and if the brand-new block is part of the highest-weight blockchain route, the node passes the block to each of its peers. Signature (Script) evaluation. Considering that Bitcoin transactions switch value, a simple requirement for a transaction to be legitimate is that the previous proprietor of the cash has signed off at the switch. So-known as digital signatures is nicely-studied cryptographic primitives, and typically include a cryptographic proof that the holder of the personal of some keypair has manipulated a message in some different and

without problems-verified way. Given that Bitcoin transactions are monetary transactions, which can be often executions of extra complex contracts than “the sole owner of some coin signed off on this spend”. Therefore, Bitcoin’s signature device consists of an expressive stack-primarily based scripting language. Regularly Bitcoin’s script is classed as although it had been a programming language; however, its cryptographic feature is to be a digital signature scheme, and consequently its maximum essential attributes are that script-primarily based signatures are publicly verifiable and existentially unforgeable. This language has the capacity to push and pa facts, branch on simple situations, and also execute a few traditional cryptographic primitives. Simple Bitcoin transactions can be little extra than skinny wrappers around these primitives; for example, traditional “pay-to-cope with” transactions test (a) that a transaction is signed through a conventional ECDSA signature, and (b) that the best cope with can be derived from signature’s key. Transaction Verification. At its heart, a Bitcoin transaction is composed of predominant components: the inputs and the outputs. As the inputs seek advice from the outputs of other transactions, we cowl them first. Both inputs and outputs are constructed from scripts, that are instructions in a Bitcoin-specific stack-primarily based programming language. This language is very small and does now not assist looping, in order that it is able to be consistently carried out and easily audited. Outputs are pretty easy: they include (a) a cost, that is the range of Bitcoins the output represents, and (b) a script which reads values from the stack then both passes or fails. An ordinary script would possibly expect the stack to incorporate a digital signature, for instance. All this is had to validate outputs is that their scripts use the described script opcodes. Inputs are greater intricate: they encompass (a) a connection with an output of a current transaction and (b) a script which places values at the stack. To validate an input, it's far first checked that the referenced transaction output has now not been spent, i.e. It appears within the utxo set. Then that output’s script is concatenated to the input’s script, and the concatenated script is run the usage of the Script assessment set of rules. If the set of rules accepts, the transaction is legitimate. Further, the overall cost of inputs ought to be greater than or identical to the entire value of the outputs (enter values are described as the values of their referenced outputs). If the enter overall is strictly greater than the output general, the distinction is referred to as a transaction fee and is recaptured with the aid of the network. There is one exception to this final rule for so-called Coinbase transactions. Those are unique transactions which occur once in every block and can be created and not using an input at all. They're the mechanism by means of which new Bitcoins are brought into movement. The full output size ought to be less than or equal to the block praise plus the whole community fees for all other transactions

in the block. To create a transaction, a node selects outputs from its utxo set which it has the capacity to spend (for instance, outputs whose scripts count on a virtual signature, and the node is in possession of the requisite key.) It chooses enough outputs in order that their general fee is greater than or same to the amount favoured to spend. It then creates new outputs which the transaction's recipient has the capability to spend (generally this calls for contacting the recipient thru another channel, e.g. To attain the hash of a public key for which the recipient has the corresponding non-public key), and sets their values in order that the full is identical to the amount preferred to spend. Any discrepancy among the total input price and total output fee is taken into consideration as a community charge. To reduce this, the node can also upload an extra "exchange" output, which it has the ability to spend itself.

**Block Verification.** To verify a block, the Bitcoin node first exams that it is formed successfully and that the proper hash of its contents is in its header. It also assessments that the hash of the block is inside a small range — the precise variety is calculated with the aid of staring at the timestamps of the block's ancestors and trying to alter in order that destiny blocks could be created roughly every ten mins. See the Block technology algorithm for extra details about this. It then runs the Transaction Verification set of rules on each transaction in the block, and if any of them fail, the block is invalid. It's far critical to the Bitcoin cryptosystem that every one of the nodes agree at the end result of the Block Verification algorithm — and by means of extension, that each node agrees on Transaction Verification, Script evaluation, and trouble Calculation. That is, those algorithms are consensus algorithms. Extra about this can be mentioned in segment. The block is weighted in the blockchain in line with its issue.

**Block technology.** Not like the preceding algorithms, Block technology isn't executed by most Bitcoin nodes, considering the fact that it's far designed to be very computationally costly. Today it requires unique-reason hardware to be feasible. To create a block, a node assembles a listing of transactions, which can be obtained via the Bitcoin network and all bypass the Transaction Verification algorithm. The node additionally creates a Coinbase transaction, which has no inputs and whose outputs may be spent with the aid of the node itself. Those transactions are hashed up, and the resulting hash is positioned along a timestamp and nonce inside the block header. Simply so the new block bypass the Block Verification set of rules, its hash ought to fall right into a small range described via the issue Calculation algorithm. To accomplish this, the block is hashed ad nauseum for distinctive values of the nonce until a hash is observed which falls into the required variety. This computation is called evidence of labour, and Bitcoin's security relies upon on it satisfying several diffused mathematical houses, so one can be mentioned in segment. Problem

Calculation, there are motives that Bitcoin blocks are accompanied with the aid of an evidence-of-work. One is to create an opportunity price for extending the blockchain, forcing could-be attackers to decide to a single branch of the chain. The opposite is too gradual the tempo of blockchain extensions in order that the whole network may be made aware about each block earlier than it's far prolonged. The evidence-of work additionally offers an herbal way to weight each block, so that for each course inside the blockchain one could compute the "overall paintings". The higher the total work of a direction, the extra members are (statistically) required to participate to create it, and consequently "highest general paintings" is a proxy each for "regarded to the majority" and "hardest to forge". For these motives, Bitcoin nodes are capable of achieve a dispensed consensus at the "actual" blockchain via thinking about reality to be synonymous with greatest total work<sup>7</sup>. (On the grounds that blockchain paths intrinsically order their contained blocks, consensus at the blockchain immediately gives rise to consensus on transaction ordering, that is what Bitcoin without a doubt wishes to clear up double-spend incidents constantly.) To preserve the block rate low sufficient that the network has time to acquire consensus, at the same time as excessive sufficient to facilitate transactions at a useful tempo, Bitcoin tries to supply blocks on average every ten minutes. It accomplishes this by means of a negative comments loop between the block times (as encoded inside the blocks themselves, which might be manipulable by way of dishonest miners) and the block problem. As described in segment 6, Bitcoin's proof-of-paintings scheme is that of Adam lower back's hashcash, and works through requiring the SHA256d hash of valid blocks' headers to lie inside a small range. The difficulty parameter is inversely proportional to the dimensions of this variety, and assuming that SHA256d values are uniformly random, the scale of this variety is immediately proportional to the possibility that any given block could be valid. Miners churn thru the gap of viable block headers with the aid of incrementing a nonce, in order that among any legitimate blocks, miners may additionally have together churned through many quadrillion invalid ones. The quick model of the above: if blocks' timestamps are too close together then the problem increases, that means that the range of valid hashes shrinks. Conversely, if blocks are too some distance apart the variety grows. The end result is a negative comments loop designed to cause blocks to appear each ten minutes on average.

#### 1.4] Early concepts of Cryptocurrency:



Earlier than the modern iterations of cryptocurrencies, numerous tries didn't gain significant traction. Those consist of thoughts within the early Eighties inside the Netherlands and United States. The earliest noteworthy virtual forex can be Digi cash, which failed in the Nineties.

PayPal and competitors later emerged and took a hybrid method wherein they treated digital transactions in existing currencies. These companies nonetheless play a major role in online and global trade.

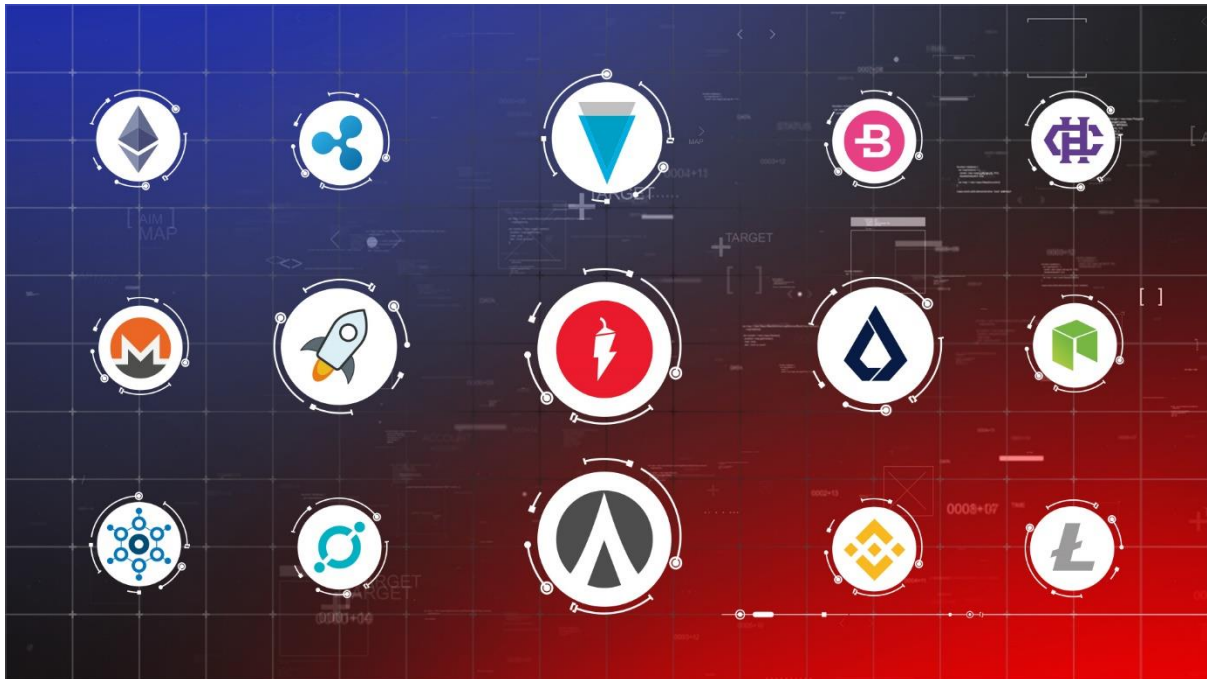
Other attempts at cryptocurrencies or their underlying generation consist of B-money, Hash cash, Floozy, and Bit Gold. One in all the most important names in early cryptocurrency is David Chaum, a computer scientist and mathematician who created digicash and may have had a function in later crypto improvement.

Bitcoin (□) is a decentralized digital foreign money, without a vital bank or single administrator, that may be despatched from consumer to user on the peer-to-peer bitcoin community without the want for intermediaries. Transactions are tested by means of community nodes thru cryptography and recorded in a public dispensed ledger called a blockchain. The cryptocurrency changed into invented in 2008 through an unknown man or woman or group of people the use of the name Satoshi Nakamoto. The foreign money started use in 2009[10] while its implementation become launched as open-supply software.

Bitcoins are created as a reward for a method known as mining. They can be exchanged for different currencies, merchandise, and offerings. Bitcoin has been criticized for its use in illegal transactions, the massive amount of strength (and as a consequence carbon footprint) utilized by mining, charge volatility, and thefts from exchanges. Some investors and economists have characterised it as a speculative bubble at diverse instances. Others have used it as a funding, although several regulatory organizations have issued investor alerts about bitcoin.

A few local and country wide governments are officially using Bitcoin for e.g., United States, El Salvador, adopting it as a legal gentle. The phrase bitcoin changed into described in a white paper published on 31 October 2008. It's far a compound of the words bit and coin. No uniform convention for bitcoin capitalization exists; a few sources use Bitcoin, capitalized, to refer to the generation and community and bitcoin, lowercase, for the unit of account.

## 1.5] Altcoins:



What Are Altcoins?

Altcoins are cryptocurrencies aside from Bitcoin (BTCUSD). They share characteristics with Bitcoin however also are different in different approaches. For instance, some altcoins use a distinctive consensus mechanism to supply blocks or validate transactions. Or they distinguish themselves from Bitcoin by means of providing new or extra abilities, consisting of clever contracts or low-price volatility.

As of November 2021, there are over 14,000 cryptocurrencies. Consistent with coin market cap, Bitcoin and Ether alone accounted for nearly 60% of the total cryptocurrency marketplace in November 2021.<sup>1</sup> So-known as altcoins made up the relaxation. Because they may be frequently derived from Bitcoin, altcoin price movements generally tend to imitate Bitcoin's trajectory. However, analysts say the maturity of cryptocurrency investing ecosystems and the development of new markets for those coins will make rate moves for altcoins independent of Bitcoin's trading alerts.

### KEY TAKEAWAYS

- The term altcoin refers to all cryptocurrencies aside from Bitcoin.
- As of November 2021, there are over 14,000 cryptocurrencies. In step with coin market cap, altcoins accounted for almost 60% of the entire cryptocurrency market in November 2021.

- A number of the principal types of altcoins consist of mining-based cryptocurrencies, stable coins, protection tokens, and application tokens.
- Altcoins would possibly include most effective mining-primarily based cryptocurrencies aside from Bitcoin in the destiny as utilization maintains to expand with technology.
- Solana and Binance Coin have been among the largest altcoins by using marketplace capitalization as of November 2021.

Altcoins:

"Altcoin" is a combination of the 2 phrases "alternative" and "coin" and includes all options to Bitcoin. The fundamental framework for Bitcoin and altcoins is similar. For that reason, they proportion code and feature like peer-to-peer systems or like a large laptop capable of processing big quantities of facts and transactions on the same time. In a few times, altcoins additionally aspire to become the subsequent Bitcoin by means of becoming a cheaper method for digital transactions.

But there are also numerous variations among Bitcoin and altcoins. Bitcoin is many of the first iterations of a cryptocurrency, and its philosophy and layout set the benchmark for the improvement of different coins. But its implementation has numerous shortcomings. As an instance, evidence of labour (pow)—the consensus mechanism used to create blocks—is energy-extensive and time-ingesting. Bitcoin's smart settlement skills are also constrained.

Following its introduction in 2009, Bitcoin became the first extensively followed application of evidence of work (pow).<sup>2</sup> pow bureaucracy the premise of many different cryptocurrencies as nicely, bearing in mind comfortable, decentralized consensus.

Altcoins enhance upon Bitcoin's perceived limitations to establish an aggressive advantage. Numerous altcoins use the proof of stake (pos) consensus approach to limit strength intake and the time required to create blocks and validate new transactions.

Ether, as an example, the arena's 2nd-biggest cryptocurrency by way of marketplace cap, is used as fuel (or charge for transaction prices) in smart contracts at the Ethereum blockchain. Because the lots-predicted release of Ethereum. Analysts have verified, altcoins generally cope with the traditional opinions of Bitcoin, like scalability and sustainability.

Via distinguishing themselves from Bitcoin in this manner, altcoins have created a market for themselves. In flip, this has attracted buyers who see ability in them as alternatives to Bitcoin.

The buyers assume to earnings as altcoins garner extra traction and customers and recognize in rate.

#### Styles of Altcoins:

Depending on their functionalities and consensus mechanisms, altcoins are available various types and categories. Right, here's a brief summary of a number of the greater important ones. It is feasible for an altcoin to fall into more than one class.

#### Mining-based:

As their call shows, mining-based totally altcoins are mined into life. Maximum mining-based totally altcoins use pow, a technique through which structures generate new coins by means of solving tough troubles to create blocks. Examples of mining-based totally altcoins are Litecoin, Monero, and zcash. Most of the top altcoins in early 2020 fell into the mining-based totally class. The opportunity to mining-based totally altcoins is premined and regularly a part of a preliminary coin offering (ICO). Such coins are not produced thru a set of rules but are allotted earlier than they're listed in cryptocurrency markets. One example of a premined coin is Ripple's XRP.

#### Stablecoins:

Cryptocurrency buying and selling and use had been marked by means of volatility on the grounds that release. Stablecoins aim to reduce this normal volatility by pegging their value to a basket of products, which include fiat currencies, precious metals, or other cryptocurrencies. The basket is supposed to act as a reserve to redeem holders if the cryptocurrency fails or faces issues. Fee fluctuations for stablecoins are not supposed to exceed a narrow range.

Amazing stablecoins include Tether's USDT, makerdao's DAI, and the USD Coin (USDC). In March 2021, fee processing giant Visa Inc. (V) announced that it might begin settling a few transactions on its community in USDC over the Ethereum blockchain, with plans to roll out in addition stablecoin agreement capability later in 2021.<sup>4</sup>

#### Security Tokens:

Protection tokens are similar to securities traded in stock markets besides they've a virtual provenance. Security tokens resemble conventional stocks, and they often promise fairness

inside the form of ownership or a dividend pay out to holders. The possibility of price appreciation for such tokens is a major draw for buyers to spend money on them.

In 2021, the Bitcoin pockets company Exodus successfully finished a Securities and alternate fee-certified Reg A+ token presenting and offered \$seventy-five million shares of common stock to be converted to tokens on the Algor and blockchain. This is a historic occasion because this is the primary virtual asset protection to provide fairness in a USA-based totally issuing organisation.

Meme coins:

As their name shows, meme coins are stimulated by means of a funny story or a stupid tackle like squid games coin. They typically benefit popularity in a brief time frame, frequently hyped on line through distinguished crypto influencers and retail buyers trying to take advantage of quick-term gains.

For example, Tesla, Inc. (TSLA) CEO and cryptocurrency fanatic Elon Musk regularly posts cryptic tweets approximately leading meme coins Dogecoin (DOGEUSD) and Shiba Inu, which often significantly moves their expenses. In October 2021, Shiba surged ninety-one% in a 24-hour length after Musk tweeted a photo of his pet Floki, the Shiba Inu doggy, on a Tesla.<sup>6</sup> Many seek advice from the sharp run-up in those precise altcoins throughout April and can 2021 as "meme coin season," with masses of those cryptocurrencies posting extensive percentage gains based totally on pure speculation.

An initial coin providing (ICO) is the cryptocurrency industry's equivalent to a preliminary public supplying (IPO). An organization trying to improve cash to create a brand-new coin, app, or provider launches an ICO as a manner to elevate finances.

Utility Tokens:

Software tokens are used to offer offerings within a community. For example, they are probably used to purchase offerings, pay network costs, or redeem rewards. Unlike protection tokens, utility tokens do no longer pay out dividends or element with an ownership stake. Filecoin, that is used to purchase garage space on a network, is an example of an application token.

Are Altcoins good Investments?

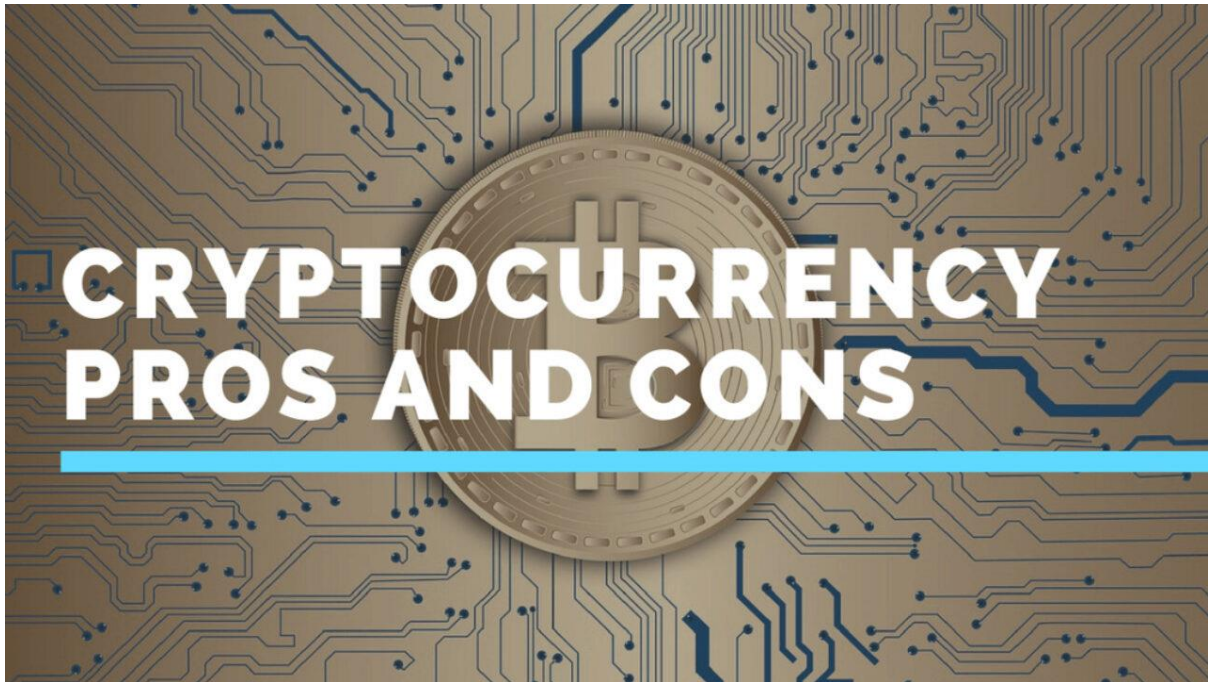
The market for altcoins is nascent. It is an unequal pairing. The quantity of altcoins indexed in cryptocurrency markets has hastily improved within the past decade and attracted hordes of retail buyers, feverishly making a bet on their charge moves to accumulate short-term income. But such investors do not have the capital important to generate enough market liquidity. Thin markets and a scarcity of regulation produce quicksilver volatility in altcoin valuations.

Do not forget the case of Ethereum's ether, which reached its previous peak of \$1,299.95 on Jan. 12, 2018. Just numerous weeks later, it become down to \$597.36, and with the aid of the year's end, ether's charge had crashed to \$89.52. Yet the altcoin reached document fees of above \$four,750 simply two years later in November of 2021. Timed trades can offer traders with a wealth of earnings.<sup>7</sup>

However, there is a problem. Cryptocurrency markets aren't but mature. No matter numerous attempts, there are not any described investment standards or metrics to assess cryptocurrencies. For the most component, the altcoin market is driven by using speculation. Numerous cases of dead cryptocurrencies, those who failed to advantage sufficient traction or virtually vanished after amassing investors' money, exist.

Consequently, the altcoin market is for buyers inclined to take at the oversized hazard of running in an unregulated and rising marketplace this is susceptible to volatility. They have to also be able to cope with stress attributable to wild price swings. For such buyers, cryptocurrency markets can offer great returns.

## **1.6] Advantages & Disadvantages Of Cryptocurrencies:**



The Destiny Of Cryptocurrencies – Advantages And Disadvantages.

There are specific and confronting opinions regarding the future of cryptocurrencies in general and bitcoins mainly. While, people with libertarian perspectives of lifestyles are positive and embrace the cryptocurrency machine, other authors, economists, and pupils from this area aren't obsessed on using cryptocurrency within the gadget of bills and economic transactions. The optimistic view of cryptocurrencies use is subsidized by using the fact that they make it less difficult to switch finances between events in a transaction; these transactions are facilitated thru the use of public and personal keys for safety functions. These fund transfers are done with minimal processing charges, allowing customers to keep away from the steep costs charged by way of maximum banks. Similarly, many nations have started to accept bitcoin as a valid forex. In particular, international locations that aim to dispose of cash have a very pleasant approach to cryptocurrencies. An issue that promoters of bitcoin use is market Capitalization of bitcoin, Ethereum and other cryptocurrencies, claiming that cryptocurrency market has become very huge and powerful, so banning it'd be to highly-priced for any USA. On the opposite aspect the fighters of cryptocurrencies declare that cryptocurrencies are very volatile, can be used for cash laundry or financing illegal sports. On this regard, Tymoigne (2015) as an example, isn't enthusiastic over cryptocurrency use, offering reasons why he believes bitcoins are not a possible digital foreign money. He notes that bitcoins are illiquid and have shown high fee volatility, and that the discounted cash price

of a bitcoin is zero. He in addition observes the currency lacks a vital company, and that there may be no financial or monetary foundation for its creation. Here are the advantages and disadvantages of cryptocurrencies:

### **Advantages Of Cryptocurrencies:**

#### 1. Open code for mining crypto foreign money:

BTC applies the identical algorithms that are utilized in on-line banking. The simplest difference of net banking is the disclosure of records about the customers. All data approximately the transaction inside the BTC community is shared (how, when), but there's no records approximately the recipient or the sender of the cash (there may be no access to the non-public facts of the owner`s pockets).

#### 2. No inflation:

The maximum quantity of coins is strictly restricted by way of 21 million Bitcoins. As there are neither political forces nor agencies capable of change this order, there's no opportunity for development of inflation inside the device.

#### 3. Peer-to-peer cryptocurrency network:

In such networks there's no grasp server, that is liable for all operations. Trade of information (in this case — cash) is among 2-3 or more software program customers. All mounted with the aid of users' application-wallets are a part of a bitcoin network. Each client stores a file of all committed transactions and the variety of bitcoins in each wallet. Transactions are made via hundreds of allotted servers. Neither banks or taxes, nor governments can manipulate the alternate of cash between.

#### 4. Limitless opportunities of transaction:

Every of the wallet holders will pay to everyone, everywhere and any amount. The transaction cannot be controlled or prevented, so that you could make transfers everywhere inside the global wherever any other user with a Bitcoin wallet is positioned.

#### 5. No limitations:

Bills made in this device are impossible to cancel. The coins can't be faked, copied or spent twice. Those capabilities assure the integrity of the complete machine. Each month the quantity of on-line stores, resources, and corporations to just accept BTC is increasing.

#### 6. Low BTC operation value:

The BTC cryptocurrency works as physical coins, combining the features of e-trade. No need to pay commission and costs to banks and different agencies. The main part of such process is mathematics, which does not want money. The fee price in this system is decrease than in another. It amounts to 0.1% of the transaction quantity. The operation interest fees go to BTC miner's wallets.

#### 7. Decentralization:

There is no relevant manage authority in the network, the community is sent to all members, every pc mining bitcoin is a member of this system. This means that the primary authority has no strength to dictate policies for proprietors of bitcoins. Or even if some part of the network is going offline, the payment device will preserve to perform strong.

#### 8. Easy to apply:

Taken under consideration that the manner of opening an account for the agency in Ukrainian banks is overcomplicated and may be refused without clarification, using BTC is handy for organizations. The organization needs approximately 5 mins to create a BTC wallet and immediately starts off evolved to use it without any questions and commissions.

#### 9. Anonymity:

It's far completely nameless and on the equal time absolutely obvious. Any organization can create an endless range of bitcoin addresses without reference to call, cope with or some other records.

#### 10. Transparency:

The BTC stores the records of transactions which have ever taken region. It is called a sequential chain of blocks or blockchain. The block chain keeps data about the whole lot. So, if the corporation has publicly used the BTC cope with, then all people can see how a great deal BTC is owned. If the company deal with is not publicly showed, then no person will ever recognize that it belongs to this organization. For entire anonymity groups usually use the unique BTC cope with for every single transaction.

#### 11. Pace of transaction:

The capability to ship money everywhere and to everybody in a count of mins after the BTC network will manner the fee.

#### 12. It belongs only to the proprietor's wallet:

There may be a completely unique electronic charge machine in which the account belongs to the owner only. As an instance, on PayPal if for any reason the company decides that the proprietor by some means uses the account in a wrong way, the device has the proper to freeze all funds at the account without even warning the proprietor approximately it. Verification of the proper utilization of account is the whole obligation of the proprietor. With BTC, the owner has a non-public key and a corresponding public key, that is the deal with to the BTC pockets. Nobody however the proprietor can withdraw bitcoins.

#### 13. Fraud Prevention:

No chances to apply some personal records for fraud. This is a vital factor. These days the majority of purchases are made with credit score cards. They're unreliable. Filling forms on web sites, clients are required to enter the following records: card variety, expiration date and code. It's tough to come up with a less comfortable way to make price. Therefore, credit playing cards are very frequently stolen. BTC transactions do not require disclosure of any non-public information. As an alternative, it makes use of two keys: public and personal. The public one is to be had to all (i.e., The cope with of BTC pockets), but the non-public secrets acknowledged most effective to the owner. The transaction wishes to be signed by interacting private keys and applying a mathematical feature. This creates evidence that the transaction is achieved by using the owner.

#### 14. Investability:

The opportunity of investing finances in the obvious and profitable resource.

### **Disadvantages Of Cryptocurrencies:**

#### 1. Sturdy volatility:

Nearly everywhere, the BTC fee depend directly at the declared statements of the governments of various international locations. This volatility creates the problem within the short time period.

2. Huge dangers of investing in cryptocurrency that need to be considered within the medium and long term. It's far our opinion that the list of cryptocurrencies (bitcoin) negative aspects is lots longer, and are associated with risk of money laundry, terrorist and different illegal pastime financing, lack of a vital issuer, which means that there may be no criminal formal entity to guaranty in case of any financial ruin, and alike. However, although it may be very hard to expect, many lecturers and professionals of this topic declare that the destiny of cryptocurrencies is shiny considering it will get rid of trade boundaries and intermediaries, it would decrease the cost of transactions, and consequently boost the change and the economy. Although, we ought to recall and pessimistic voices in the instructional international as 39 nicely, suggesting that the excessive danger of volatility, hacking risks, and absence of institutional backup makes the destiny of cryptocurrencies now not very constructive .

## **1.7] Features & Characteristics Of Cryptocurrencies:**



### I. Efficient:

The use of a peer-to-peer database means that there is no need for a central authority or 3rd party intermediaries to process and validate transactions. Users can transact and exchange cryptocurrencies directly with each other through the decentralized system, and each transaction can be verified on the blockchain. This means that anyone with internet can exchange valuables across the world with the click of a button. Furthermore, the costs of transactions using cryptocurrencies are much lower than transacting through inter-continental bank transfers.

### II. Secure:

Furthermore, since the transaction is recorded on distributed ledger, this means that there is no single point of vulnerability or failure. Everyone on the network has a copy of the ledger so there is no need for a central system because every transaction can be verified against this ledger. The decentralized ledger is known as the blockchain. This makes transactions less susceptible to hacking, bugs and system failure (as compared to a single and centralised system), since information is decentralized on a distributed network. Therefore, the blockchain technology that supports cryptocurrencies makes transactions more secure.

### III. Trust:

Trust less Cryptocurrency, like Bitcoin, enables a 'trust less' system of transactions. The decentralized network means that nobody has to trust anybody else in order for the network to work. The blockchain can validate any transaction between users. When one user

broadcasts a cryptocurrency transaction, all nodes will receive it and verify if the digital signatures are valid, before recording it on the blockchain. If the signatures are invalid, the nodes will discard the transaction. The proof-of-work algorithm also incentivizes individual nodes in the network to help validate these peer-to-peer transactions.

#### IV. Increase in Value & Deflationary:

Most cryptocurrencies have a limited supply coded into its protocol, creating a system of scarcity. For example, Bitcoin has a maximum supply of 21 million and once the supply limit is reached, no new Bitcoin will be added. This makes the existing Bitcoin that is in circulation more attractive and valuable as an asset. As the demand of Bitcoin grows, its supply will remain the same, and this causes the value of Bitcoin to increase over time, making it deflationary in nature. Users of cryptocurrency will not need to worry about the reduction in the value of their assets (unlike fiat 11 currencies). Value is also created when transactions are added to public ledgers as creating a verified “transaction block” takes work as well. Further, value comes from factors such as utility and supply and demand.

#### V. Adaptive Scaling:

Adaptive scaling means that cryptocurrencies are built with measures to ensure that they will work well on both large and small scales. Adaptive Scaling Example: Bitcoin is programmed to allow for one transaction block to be mined approximately every ten minutes. The algorithm adjusts after every 2016 blocks (theoretically, that’s every two weeks) to get easier or harder based on how long it took for those 2016 blocks to be mined. So, if it only took 13 days for the network to mine 2016 blocks, that means it’s too easy to mine, so the difficulty increases. However, if it takes 15 days for the network to mine 2016 blocks, that shows that it’s too hard to mine, so the difficulty decreases. Other measures are included in digital coins to allow for adaptive scaling including limiting the supply over time (to create scarcity) and reducing the reward for mining as more total coins are mined.

#### VI. Cryptographic:

Cryptocurrency uses a system of cryptography (AKA encryption) to control the creation of coins and to verify transactions.

#### VII. Decentralized:

Most currencies in circulation are controlled by a centralized government so their creation can be regulated by a third party. Cryptocurrency's creation and transactions are open source, controlled by code, and rely on "peer-to-peer" networks. There is no single entity that can affect the currency.

VIII: Digital Traditional forms of currency are defined by a physical object (USD existing as paper money and in its early years being backed by gold for example), but cryptocurrency is all digital. Digital coins are stored in digital wallets and transferred digitally to other peoples' digital wallets. No physical object ever exists.

#### IX. Open-Source:

Cryptocurrencies are typically open source. That means that developers can create, without paying a fee and anyone can use or join the network.

#### X. Proof-of-work:

Most cryptocurrencies use a proof-of-work system. A proof-of-work scheme uses a hard-to-compute but easy-to-verify computational puzzle to limit exploitation of cryptocurrency mining. Essentially, it's similar to a difficult to solve "captcha" that requires lots of computing power. The other method for validating coins is called proof-of-stake.

#### XI. Pseudonymity:

Owners of cryptocurrency keep their digital coins in an encrypted digital wallet. A coin holder's identification is stored in an encrypted address that they have control over – it is not attached to a person's identity. The connection between you and your coins is pseudonymous rather than anonymous as ledgers are open to the public (and thus, the ledgers could be used to glean information about groups of individuals in the network)

### **1.8] Consumer Demand:**



Call for a commodity refers to the amount of the commodity that human beings are inclined to purchase at a selected rate in keeping with unit of time, different elements (inclusive of fee of associated items, income, tastes and preferences, advertising, and so on) being steady. Call for includes the preference to shop for the commodity followed by using the willingness to shop for it and enough buying energy to buy it. As an instance-all of us would possibly have willingness to buy “Mercedes-S elegance” however just a few have the potential to pay for it. Thus, anybody cannot be stated to have a call for the automobile “Mercedes-s class”.

Call for may additionally arise from people, household and marketplace. While items are demanded with the aid of people (as an instance-garments, shoes), it is referred to as as person demand. Goods demanded with the aid of family represent household demand (for example-demand for residence, washing device). Call for for a commodity by using all individuals/families within the marketplace in total constitute market call for.

**Call for function:**

Call for feature is a mathematical feature displaying relationship among the quantity demanded of a commodity and the elements influencing demand.



$$D_x = f(P_x, P_y, T, Y, A, P_p, E_p, U)$$

Inside the above equation,

$D_x$  = quantity demanded of a commodity

$P_x$  = price of the commodity

$P_y$  = price of related goods

$T$  = Tastes and preferences of consumer

$Y$  = income degree

$A$  = advertising and promotional sports

$P_p$  = population (length of the market)

$E_p$  = client's expectancies approximately future costs

$U$  = particular elements affecting demand for a commodity which includes seasonal adjustments, taxation policy, availability of credit score facilities, etc.

### **Law of demand:**

The law of demand states that there may be an inverse courting among amount demanded of a commodity and its rate, other factors being constant. In different words, better the price, lower the demand and vice versa, other things closing regular.

Demand curve is a diagrammatic illustration of call for schedule. It's miles a graphical representation of rate- amount dating. Individual call for curve indicates the very best charge which a person is inclined to pay for one-of-a-kind quantity of the commodity. Even as, every

point available on the market demand curve depicts the maximum amount of the commodity which all clients taken together could be inclined to shop for at every degree of charge, underneath given call for conditions.

Call for curve has a poor slope, i.e., it slopes downwards from left to proper depicting that with boom in price, quantity demanded falls and vice versa. The reasons for a downward sloping demand curve may be -

### **1. Profits effect:**

With the autumn in price of a commodity, the purchasing energy of purchaser will increase. Hence, he can buy same amount of commodity with less money or he should purchase extra portions of equal commodity with equal cash. Similarly, if the price of a commodity rises, it's far equal to decrease in earnings of the purchaser as now he has to spend more for buying the identical amount as earlier than. This alteration in purchasing power because of price alternate is known as earnings impact.

### **2. Substitution effect:**

While rate of a commodity falls, it turns into rather less expensive in comparison to different commodities whose charge have now not modified. Thus, the customer has a tendency to consume greater of the commodity whose charge has fallen, i.e., they generally tend to substitute that commodity for different commodities which have not come to be extraordinarily dear.

### **3. Regulation of diminishing marginal application:**

It's miles the basic purpose of the law of call for. The regulation of diminishing marginal software states that as a person consumes more and more units of a commodity, the utility derived from it is going on decreasing. On the way to get maximum delight, a man or woman purchases in any such manner that the marginal utility of the commodity is equal to the price of the commodity. When the fee of commodity falls, a rational client purchases more that allows you to equate the marginal utility and the charge level. Thus, if a patron wants to purchase large portions, then the price ought to be lowered. That is what the regulation of call for also states.

### **Exceptions to law of demand:**

The instances wherein law of demand is not relevant are as follows-

1. There are certain goods which can be purchased specially for his or her snob enchantment, inclusive of, diamonds, air conditioners, luxurious cars, antique paintings, and so on. These items are used as reputation symbols to display one's wealth. The greater costly these items emerge as, more precious could be they as status symbols and extra could be there call for. Hence, such goods are bought more at higher price and are purchased less at decrease expenses. Such items are referred to as conspicuous goods.
2. The regulation of demand is also not applicable in case of Giffen goods. Giffen items are those inferior goods, whose income impact is more potent than substitution impact. Those are consumed via bad families as a necessity. As an example, potatoes, animal fats oil, low excellent rice, and so on. An increase in rate of such correct increases its call for and a decrease in charge of such precise decreases its call for.
3. The regulation of demand does not apply in case of expectancies of exchange in price of the commodity, i.e., in case of hypothesis. Consumers tend to purchase less or generally tend to postpone the purchase in the event that they expect a fall in rate of commodity in future. Similarly, they generally tend to buy greater at high rate looking forward to the fees to growth in destiny.

### **Factors Affecting demand:**

Even though the focus in economics is on the connection between the rate of a product and what sort of customers are inclined and capable to shop for, it is crucial to study all the factors that have an effect on the call for a good or service.

These elements consist of:

#### **Rate of the Product:**

There may be an inverse (bad) relationship between the rate of a product and the amount of that product purchasers are inclined and capable to buy. Consumers want to buy extra of a product at a low charge and less of a product at an excessive charge. This inverse dating among price and the quantity clients are inclined and able to buy is often known as The regulation of call for.

### **The purchaser's profits:**

The effect that profits have on the amount of a product that customers are willing and able to buy depends at the sort of precise we are approximately. For maximum items, there's a tremendous (direct) courting among a consumer's earnings and the amount of the coolest that one is willing and, in a position, to buy. In different words, for these goods when income rises the call for the product will increase; when income falls, the demand for the product will decrease. We call these kinds of items normal goods.

But, for some goods the effect of a trade in income is the opposite. For example, consider a low-great (excessive fats-content material) ground red meat. You may purchase this even as you are a pupil, because it's miles less expensive relative to different sorts of meat. However, in case your profits will increase enough, you might decide to prevent shopping for this type of meat and rather purchase leaner cuts of ground red meat, or maybe surrender floor beef totally in prefer of red meat tenderloin. If this have been the case (that as your income went up, you were inclined to buy much less excessive-fat ground beef), there would be an inverse relationship among your profits and your call for this sort of meat. We call this kind of precise an inferior true. There are vital things to hold in thoughts approximately inferior goods. They're now not always low-high-quality goods. The term inferior (as we use it in economics) simply means that there is an inverse dating between one's earnings and the demand for that appropriate. Additionally, whether a good is ordinary or inferior can be unique from person to person. A product can be an everyday excellent for you, but an inferior right for every other man or woman.

### **The fee of associated goods:**

As with earnings, the impact that this has on the quantity that one is inclined and able to buy depends on the sort of precise we are speaking approximately. Reflect on consideration on two items which are commonly fed on collectively. As an example, bagels and cream cheese. We name those varieties of items compliments. If the price of a bagel is going up, the law of demand tells us that we can be willing/able to buy fewer bagels. But if we need fewer bagels, we are able to additionally want to apply less cream cheese (on the grounds that we usually use them together). Consequently, a boom in the price of bagels method we want to buy less cream cheese. We can summarize this with the aid of pronouncing that when goods are enhances, there may be an inverse courting between the fee of 1 accurate and the call for the other suitable.

Then again, some goods are taken into consideration to be substitutes for each other: you do not consume each of them collectively, however as an alternative select to eat one or the alternative. As an instance, for some humans Coke and Pepsi are substitutes (as with inferior items, what is an alternative accurate for one individual might not be an alternative to any other individual). If the price of Coke will increase, this could make Pepsi extraordinarily extra appealing. The regulation of call for tells us that fewer human beings will purchase Coke; some of those human beings may determine to switch to Pepsi alternatively, therefore growing the amount of Pepsi that humans are inclined and capable to shop for. We summarize this by saying that when items are substitutes, there's a fine dating among the charge of one true and the demand for the alternative precise.

### **The tastes and possibilities of purchasers:**

That is a less tangible item that still may have a big impact on call for. There are all forms of things that could change one's tastes or preferences that purpose human beings to need to shop for greater or less of a product. As an instance, if a celebrity endorses a new product, this will increase the demand for a product. Alternatively, if a brand-new health look at comes out pronouncing something is bad for your fitness, this could decrease the demand for the product. Another example is that someone may also have a higher demand for an umbrella on a wet day than on a sunny day.

### **The customer's expectations:**

It doesn't just count what's currently taking place - one's expectations for the destiny can also affect how much of a product one is willing and capable to shop for. As an instance, if you pay attention that Apple will soon introduce a new iPod that has greater reminiscence and longer battery existence, you (and other clients) may decide to attend to shop for an iPod till the new product comes out. Whilst human beings decide to attend, they're decreasing the present-day demand for iPod due to what they expect to take place in the destiny. Similarly, if you count on the charge of gas to go up the next day, you may top off your automobile with gas now. So, your call for gasoline nowadays improved due to what you expect to take place the next day. That is similar to what befell after Hurricane Katrina hit in the fall of 2005. Rumours started that gasoline stations would run out of gas. As a result, many consumers decided to fill up their cars (and gas cans), main to lengthy traces and a large increase inside the demand for gasoline. This became all based on the expectation of what might occur.

**The number of purchasers in the marketplace:**

As greater or fewer purchasers enter the market this has an instantaneous impact on the amount of a product that customers (in widespread) are inclined and in a position to shop for. As an instance, a pizza store positioned close to a college may have greater demand and accordingly better sales all through the autumn and spring semesters. In the summers, when much less college students are taking lessons, the demand for his or her product will decrease because the range of purchasers in the location has substantially decreased.

## 1.9] Factors Affecting Growth Of Cryptocurrencies:



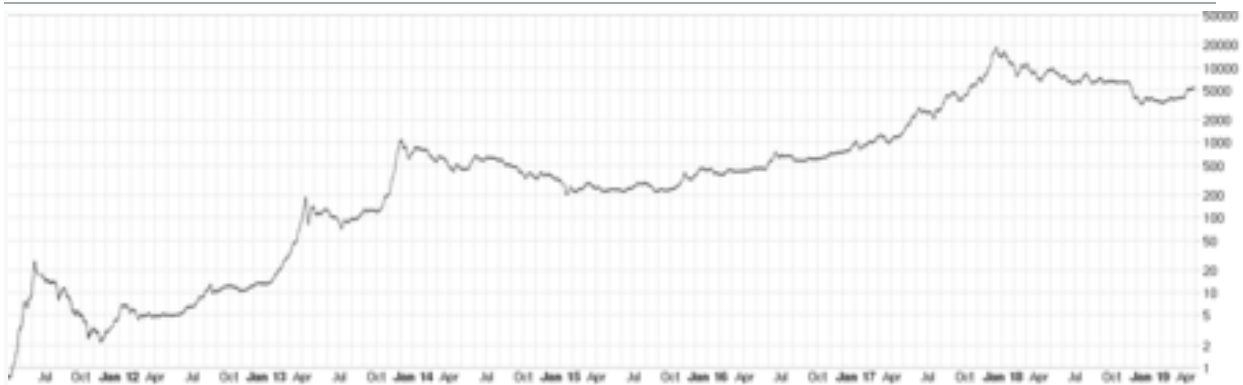
Despite the traction that cryptocurrency has gained over the last half decade, its path has been turbulent. Many argue that the performance of anarchic cryptocurrency has been underwhelming in comparison to the hype it stirred when it publicly emerged in 2009. This section will address two of the main 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. Government Regulations: While the expanding cryptocurrency market has the potential to revolutionize 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. Regulatory systems are burgeoning, with myriad approaches being taken by various governments. Current regulatory measures are in their infancy and continue to evolve with the rapidly expanding industry. Regulations will offer greater legitimacy to a currency struggling to gain mass acceptance. They will standardize elements of the market and minimize at least some of the volatility. While governments are testing an amalgam of regulatory steps, their end goal is the same: to limit fraud, protect consumers, respect economic sanctions, and institute viable taxation methods. 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 in flux and subject to frequent change. The United States takes a permissive, slightly neutral stance on cryptocurrencies. The current challenge faced

by regulators is expanding existing laws to allow for the unique aspects and challenges of the virtual currency world. For taxation purposes, virtual currencies are handled as property rather than as currency, and transactions are subject to the same taxation norms as other types of property. At a federal level, the Financial Crimes Enforcement Network (FINCEN) has taken the forefront on implementing regulatory methods. The FINCEN's early attempts to clarify cryptocurrencies' place in the financial market came in 2013 with its announcement that while individual use of virtual currencies is not to be considered a money service business (MSB), exchanges and conversion of virtual currencies do fall under the definition of a money service business. As such, virtual currency transmitters must follow the government requirements already established for MSBs, including reporting techniques, record-keeping and abiding by the Bank Secrecy Act of 1970. This is significant in that it demands a degree of accountability from virtual currency transmitters, as well as one more layer of security against fraud. Individual U.S. states also have a large role in establishing regulations for the emerging currency. As of April 2015, 12 states and Puerto Rico have instituted licensing protocol for virtual coin operation. Currently, California has more cryptocurrency activity than any other state, and has been proactive in incorporating digital currencies into existing financial frameworks. In January of 2015, cryptocurrency gained legal status in California, leading to predictions that other states would follow suit. New York has also taken note of the emerging market, currently in the final stages of instituting its own regulatory framework. Australia, whose citizens account for roughly 7% of Bitcoin users, has not formally adopted regulations for virtual currency, but has established a system of taxation for the coinage. Trading done in the form of cryptocurrency is subject to the country's pre-existing tax rules relating to goods and services. While the Australian government has been clear that "Bitcoin is not a legally recognized universal means of exchange and form of payment by the laws of Australia or the laws of any other country," it has provided space for the cryptocurrency to comfortably exist. Canada perhaps has the most cohesive and developed system of regulation, being the first country in the world to establish a tax on virtual currencies. This taxation system seeks to minimize the risks most frequently associated with cryptocurrencies: money-laundering and terrorist-funding. The Bank of Canada has expressed a willingness to acknowledge the developing virtual currency market, but currently recognizes cryptocurrencies as investments rather than currency. Russia has reacted less favourably to the emergence of cryptocurrencies. The Bank of Russia shared concerns that the currency could facilitate money-laundering attempts, as well as be convenient means to transport funds to terrorist organizations. Additionally, the bank argued

that virtual currency violates federal law mandating one central bank and currency. Last year, the Ministry of Finance announced its intent to restrict use of cryptocurrency as a means of payment. In February of 2015, Russia's Prosecutor General's Office claimed that Bitcoin "cannot be used by individuals or legal entities." And in April, Deputy Minister of Finance Alexei Moiseev reiterated that position, stating "The law, which provides measures for penalizing the usage of monetary surrogates, will finally be passed this year" Indeed, Russia's crackdown on the currency is already evident, with at least half a dozen cryptocurrency websites blocked at the beginning of 2015. This scepticism towards "money surrogates" is shared by China, which has also taken steps to restrict the use of virtual coinage. In December of 2013, China's Central Bank prohibited financial institutions from handling Bitcoin transactions, limiting legal trade of the coin to individuals and private parties. Citizens are being encouraged to treat bitcoins and other cryptocurrencies as a good rather than a viable currency. The trend towards restriction is mirrored in other countries. Vietnam has firmly cautioned its citizens on the use of cryptocurrencies. While there is no regulation specifically relating to virtual currency usage, the Bank of Vietnam has warned that Vietnam does not consider virtual currency to be a legitimate form of currency. Transactions utilizing forms of cryptocurrency are not covered by legal protections.

## 1.10] Price Value & History Of Bitcoin:

### Prices and value history:



The price of a bitcoin reached US\$1,139.9 on 4 January 2017. (Semi logarithmic plot)

Among the factors which may have contributed to this rise were the European sovereign-debt crisis – particularly the 2012–2013 Cypriot financial crisis – statements by fincen improving the currency's legal standing, and rising media and Internet interest.

Until 2013, almost all market with bitcoins were in United States dollars (US\$).

As the market valuation of the total stock of bitcoins approached US\$1 billion, some commentators called bitcoin prices a bubble. In early April 2013, the price per bitcoin dropped from \$266 to around \$50 and then rose to around \$100. Over two weeks starting late June 2013 the price dropped steadily to \$70. The price began to recover, peaking once again on 1 October at \$140. On 2 October, The Silk Road was seized by the FBI. This seizure caused a flash crash to \$110. The price quickly rebounded, returning to \$200 several weeks later. The latest run went from \$200 on 3 November to \$900 on 18 November. Bitcoin passed US\$1,000 on 28 November 2013 at Mt. Gox.



## Bitcoin value history (comparison to US\$)

Date	USD : 1 BTC	Notes
Jan 2009 – Mar 2010	Basically nothing	No exchanges or market, users were mainly cryptography fans who were sending bitcoins for hobby purposes representing low or no value. In March 2010, user "smoketoomuch" auctioned 10,000 BTC for \$50 (cumulatively), but no buyer was found.
May 2010	Less than \$0.01	On 22 May 2010, Laszlo Hanyecz made the first real-world transaction by buying two pizzas in Jacksonville, Florida, for 10,000 BTC, an amount that would surpass \$600 million if held in April 2021.
Feb 2011 – April 2011	\$1.00▲	Bitcoin takes parity with US dollar.
Nov 2013	\$350–\$1,242 ▲	Price rose from \$150 in October to \$200 in November, reaching \$1,242 on 29 November 2013.
Apr 2014	\$340–\$530▼	The lowest price since the 2012–2013 Cypriot financial crisis had been reached at 3:25 AM on 11 April.
2-3 March 2017	\$1,290+ ▲	Price broke above the November 2013 high of \$1,242 and then traded above \$1,290.
20 May 2017	\$2,000 ▲	Price reached a new high, reaching \$1,402.03 on 1 May 2017, and over \$1,800 on 11 May 2017. On 20 May 2017, the price passed \$2,000 for the first time.
1 September 2017	\$5,013.91▲	Price broke \$5,000 for the first time.
17-20 November	\$7,600- 8,100 ▲	Briefly topped at \$8004.59. This surge in bitcoin may be related to the 2017 Zimbabwean coup d'état. On one bitcoin

2017		exchange, 1 BTC topped at nearly \$13,500, just shy of 2 times the value of the International market.
15 December 2017	\$17,900 ▲	Price reached \$17,900.
17 December 2017	\$19,783.06 ▲	Price rose 5% in 24 hours, with its value being up 1,824% since 1 January 2017, to reach a new all-time high of \$19,783.06.
22 December 2017	\$13,800 ▼	Price lost one third of its value in 24 hours, dropping below \$14,000.
5 February 2018	\$6,200 ▼	Price dropped by 50% in 16 days, falling below \$7,000.
31 October 2018	\$6,300 —	On the 10th anniversary of bitcoin, the price held steady above \$6,000 during a period of historically low volatility.
7 December 2018	\$3,300 ▼	Price briefly dipped below \$3,300, a 76% drop from the previous year and a 15-month low.
16 March 2020	\$5,000 ▼	Price dropped 50% in early 2020, losing 25% in 24 hours early in the COVID-19 pandemic.
27 July 2020	\$10,944 ▲	Price recovered value lost in COVID-related crash.
30 November 2020	\$19,850.11 ▲	Bitcoin price reached new all-time high of \$19,850.11.
8 January 2021	\$41,973 ▲	Bitcoin traded as high as \$41,973.
11 January 2021	\$33,400 ▼	Price briefly fell as much as 26% but pared losses to trade around \$33,400.

8 February 2021	\$44,200 ▲	Bitcoin price surge after Elon Musk and Tesla announcements of investments into Bitcoin, including acceptance of payment.
16 February 2021	\$50,000 ▲	Bitcoin price reached new all-time high of \$50,000.
10 April 2021	\$60,000 ▲	Bitcoin back above \$60,000 as Coinbase gets ready to go public on the stock market.
14 April 2021	\$64,800 ▲	The all-time high price of \$64,800 was reached on April 14, 2021.
19 May 2021	\$30,000 ▼	Bitcoin price drops to \$30,000 at one point following suggestions that Tesla has sold or will sell its Bitcoin holdings and a new set of regulations from the Chinese government to support their cryptocurrency crackdown.
2 September 2021	\$50,128 ▲	Bitcoin price recovered to \$50,000
17 October 2021	\$62,600 ▲	Bitcoin price returned near to ATH
20 October 2021	\$66,974.77 ▲	Bitcoin price hits all-time high above \$66,000
22 January 2022	\$35,000 ▼	Bitcoin price falls almost 50% from all-time highs, to below \$35,000

### 1.11] History of cryptocurrencies:



Historically, cryptography was particularly used by the army, secret services and intelligence agencies as a safety from the leak of labelled records. Maximum of the lecturers of this area accept as true with that a self-sustaining virtual forex that isn't always connected to any

government or different intermediary consisting of a bank is appealing due to the anonymity and liberty that it presents. Switch of money across geographic areas both home and international may be easily and speedy accomplished without annoying about governmental policies. A pioneer of cryptography in United States is taken into consideration Horst Fietzel with its eBook of the digital Encryption trendy (DES) on March 17, 1975 inside the Federal register. Fietzel, in that point IBM researcher, running on an assignment codenamed task Lucifer, filed a patent application for a forty-eight-bit block cipher cryptographic system (additionally known as the Lucifer cipher). The venture changed into commissioned by using Lloyds financial institution for encrypting ATM transactions. In 1972, the countrywide Bureau of requirements (NBS) diagnosed the want for an encryption well known for encrypting unclassified however touchy authorities' documents, and in may also 1973, solicited suggestion for the sort of device. The NBS then selected, with the approval of the country wide safety enterprise (NSA), a modified model of IBM's set of rules. The assignment changed into commissioned by Lloyds bank for encrypting ATM transactions. The original set of rules was bolstered to a fifty-six-bit block cipher via a crew led by means of Walter Tuchman and aided by means of Carl Meyer . The publication of DES did result in many discussions and debates within the academic network and civil society. Some lecturers along with Martin Hellman and Whitfield Diffie at Stanford college felt that the authentic fifty-six-bit block cipher was altered by means of IBM at NSA's behest to provide that NSA a backdoor into the cryptographic gadget (Subramanian and Chino) [7]. There have been additionally questions raised that time regarding the security of fifty-six-bit cipher. But DES have become very famous and turned into soon adopted across the world as the encryption trendy. Some other development that contributed in cryptocurrency creation is the so known as Cyberpunk movement that "officially" emerged within the early Nineties. The cyberpunk movement is an activist motion whose individuals are searching for to engineer social and political change and subvert the popularity-quo by using improving protection and privateness thru cryptographic techniques. The founders of the cyberpunk organization were Eric Hughes, a UC Berkeley mathematician, Timothy C. May, a former chief scientist at Intel, and John Gilmore, one of the early employees (the fifth employee) at sun microsystems and founding father of Cygnus assist as well as the digital Frontier basis. All three were wealthy, and shared a robust libertarian streak. The organization began with an assembly in 1992 in the Bay location of San Francisco. They commenced the cyberpunk mailing 36 list in 1992 and inside two years, the mailing list garnered over six hundred subscribers. Another major contributor to introduction of cryptocurrency is David Chaum, a cryptologist who were

given his doctoral degree from the university of California Berkeley. As a doctoral scholar within the 1980s, Chaum explored numerous ideas and developed numerous methods focusing on anonymous conversation and nameless economic transactions. In 1981 Chaum posted the thing “Untraceable email, return Addresses, and digital Pseudonyms” which described a way, using public key cryptography, to cover the identification of a participant in an e mail verbal exchange, in addition to the contents themselves. He explained considered one of its makes uses of in elections wherein an examiner could verify that each one the votes have been efficiently counted without revealing the identification of the citizens. A large contribution of Chaum in this field is advent of a digital currency based totally on cryptography that he called E-coins, and in 1990 founded an organisation referred to as digicash, an electronic cash organisation. The world’s first electronic coins fee occurred in may additionally 1, 1994. But most tries at developing an achievable cryptocurrency have didn't benefit client reputation, until bitcoin turned into introduced in January 2009 when Satoshi Nakamoto who's believed to use this name as a pseudonym mined the primary block of bitcoins, referred to as the genesis block, gaining a reward of 50 bitcoins.

### **1.12] The Evolution Of Crypto:**



While often hailed as a new trend, cryptocurrency dates back almost half a century. The past decade in particular has seen massive shifts in digital assets and crypto investments. To better

understand where crypto came from and where it's going, we're exploring a brief history of cryptocurrency.

### **1983-2008: The Pre-Bitcoin Era**

Although Bitcoin didn't become a giant overnight, it was quick to become the most recognizable crypto. In the first 25 years of digital currency, the stage was set to allow Bitcoin and other currencies to take the stage.

#### **1983: ecash**

In 1983, David Chaum developed ecash. The goal of the platform was to allow people to transfer money anonymously over the internet. An early champion of digital privacy advocacy he used cryptographic technology to allow *blind signatures* to keep interaction private and secure. This became essential to future currencies, putting the "crypto" in cryptocurrency.

#### **1995: digicash**

Although Chaum founded digicash in 1989, it started to really show promise in the mid-90s. Based on the ecash concept, he entered agreements with some smaller banks and financial corporations including Mark Twain Bank and the Deutsche Bank.

Difficulties with scaling, market adoption, and securing contracts with larger banks ultimately led to digicash and its "cyberbucks" falling apart. The base technology was in place, but the market was not yet ready to adopt it. With early supporters being limited to libertarians and other small groups seeking digital currency outside of government control.

#### **1998: Crypto is Coined**

The term *cryptocurrency* was officially established in 1998, the same year digicash went bankrupt. During this time Wei Dai was pushing *B-money*, as he pushed a crypto model focusing on decentralization. Although the term cryptocurrency outlasted B-money, Wei Dai would go on to be one of the most important names in crypto.

Today, the *Wei* -the smallest unit of Ether- is named after Dai. His concept of a decentralized payment system using cryptography is a cornerstone of all modern cryptocurrencies.

#### **2008: Economic Crisis Strikes**

The '08 economic collapse shook the foundations of the financial industry. The value of traditional money decreased at the same time that public trust in banks and financial institutions began to waiver. Inherent flaws in the existing systems were exposed and people were looking for a new answer.

This set the stage for a public that was more ready to adopt a decentralized alternative. Satoshi Nakamoto, the creator of Bitcoin, cites this period as his inspiration, even referencing the bank bailout in Bitcoin's genesis block.

### **2009-2017: Bitcoin Birth to Boom**

During this period, Bitcoin went from being the only cryptocurrency anyone had heard of (if they had even heard of cryptocurrency at all!) To being the hottest new investment opportunity on the block(chain). Although it was hardly the only coin out there, Bitcoin had begun to pull crypto into the public lens.

#### **2009: Bitcoin**

Satoshi Nakamoto, the pseudonym of the still unknown creator, releases Bitcoin. He strove to show that another time of currency is possible, allowing for international and decentralized use without relying on any financial institution. To many, it seemed a pipedream at the time, but history (and the near future) would be kind to Nakamoto.

#### **2009: New Liberty Standard**

The first crypto exchange, the New Liberty Standard, is established. On this platform, users can buy/sell Bitcoin. This was a precursor to modern platforms like Binance, Coinbase, and Kraken. Since there was no true valuation of Bitcoin at this time, the NLS established the price by dividing \$1 USD by the average amount of electricity to run a high CPU computer multiplied by the average residential cost of electricity in the previous year.

When the New Liberty Standard first launched Bitcoin, trading \$1 USD was worth 1,309.03 Bitcoin (BTC). If they held on for just a few short years, early investors would soon be rich.

#### **2010: Bitcoin Valuation**

Bitcoin's first true valuation came when it was sold for the first time. And as with many great things, it started with pizza.

The first Bitcoin sale famously exchanged 10,000 BTC for two pizzas. At current prices, that would have been worth more than \$300 million, enough to buy the pizza franchise multiple times over. Still, this is an important moment as it finally makes it possible to assign Bitcoin a true monetary value.

### **2011: Competition Emerges**

While widespread adoption of crypto was still a few years out, competitors were seeing the potential. New altcoins began to emerge, hoping to cash in on Bitcoin's popularity. They attempted to jump on new angles and services to attract crypto investors.

At this time, Litecoin became one of Bitcoin's biggest contenders. It used a new algorithm and had a higher maximum cap for coins. As a result, Litecoin became cheaper and faster than BTC. Yet, it still failed to supplant the bigger coin. Although it's still around today, one Litecoin is only worth (at the time of writing) \$235 USD.

### **2012: The Halvening**

The first halvening happened in 2012, with the next in 2016 and again at the end of 2020. The halvening (or halving) is where the rewards for mining Bitcoin are cut in half. This is necessary because there is a finite amount of Bitcoin available. The event occurs every 210,000 blocks and often precedes a surge in the coin's value.

The first halvening was significant as it marked the traction cryptocurrency was getting. Enough mining was occurring that rewards had to be slowed to prevent running out of Bitcoin and/or devaluing the currency. Mining was hitting the mainstream and crypto was really entering the public eye.

### **2012: Staking Tokens**

Up to this point, the only way to make passive income with cryptocurrency had been through mining. With rewards halved and more resources needed to mine coins effectively, it was no longer a practical option for people to earn Bitcoin. Trading or holding coins could boost portfolios but wasn't generating income.

Then a 2012 paper for Peercoin introduced the Proof of Stake concept. Switching from a proof-of-work model to proof-of-stake increases security and is more energy-efficient. By staking coins, crypto investors can use their tokens or coins to earn more.

### **2012–2014: Coinbase**

In October 2012, one of the world's most recognized exchanges, Coinbase Global Inc (or simply Coinbase), launched. The exchange was founded by Brian Armstrong and Fred Ehrsam and reached 1 million users by 2014. Today, it is the largest exchange by trading volume.

### **2013: Dogecoin**

Dogecoin is the flagship of meme coins. Although it was originally created as a joke, it played an important role in crypto history. Using the popular Doge meme, it was able to reach a larger demographic while also distancing itself from some of the negative imagery and controversy that surrounded other coins. It built a consumer-friendly image with fundraisers like Doge4Water and raising money to take the Jamaican bobsled team to the Sochi Olympics.

Later, Dogecoin would go on to prove the potential value from the speculative nature of cryptocurrency. May 4, 2021, Dogecoin's value passed \$0.50 USD, increasing more than 20,000% in one year.

### **2013: HODL**

In 2013 a Bitcoin investor named gamekyuubi on the bitcointalk forum encouraged his fellow investors to avoid selling during a price drop. In a semi-drunk state from the bar, he typed "I AM HODLING," instead of 'holding'. The typo became an overnight meme before becoming a recognized crypto investing term meaning to stay invested in an asset during a rapid decline in price.

To this day, some people consider HODL an acronym for 'Hold On for Dear Life', but that is an alternative interpretation.

### **2016: Ethereum ICO**

The only coin to truly come close to rivalling Bitcoin is Ethereum. The platform goes beyond currency, generating smart contracts and applications through blockchain. It is the biggest mover in using crypto to enhance business processes using the same secure model of authentication. This would prove to offer more value to banks and large enterprises, making crypto more appealing to them in the near future.

Ethereum's currency, Ether, quickly found its initial use case: Initial Coin Offerings (icos). Icos brought token projects liquidity from an emerging global investor base, and allowed

investors to trade cryptocurrencies similarly to public stock. The US government warned that this model left potential for scams and China banned it altogether. And the SEC is still picking up the pieces from the variety of Wild West activities that went down on the fringes of securities laws. Despite this, Ethereum and the initial coin offerings showed that cryptocurrency was capable of so much more.

### **2017: Bitcoin Booms**

Bitcoin hits \$10,000 USD, a long way from paying 10k BTC for two pizzas! Although steady growth had been going for years, hitting this benchmark along with the boost from the previous year's halvening spun the world into a Bitcoin frenzy.

Early investors were bragging about their new wealth and new investors were looking for any opportunity to cash in. Meanwhile, big banks were taking notice and the fintech industry exploded with new uses for blockchain technology.

Cryptocurrency became truly proven, finally recognized as one of the biggest markets for both traditional and alternative investors. Investors across the world would enter telegram groups asking founders and other investors in token project the typical phrase, "when moon?"

### **2019-Forward: Crypto Goes Mainstream & Evolves**

#### **2019: Commercial Buy-In**

Large enterprises and financial institutions start to make massive investments into cryptocurrency. Ethereum becomes a major focus as its additional services and smart contracts can improve efficiency, speed, security, and automation. Microsoft launches a blockchain service so users can compile and deploy Ethereum contracts.

Other Fortune 500 companies continue to buy into Ethereum over the next few years including JP Morgan, Chase, Amazon, IBM, and Walmart.

#### **2020: Crypto Lending**

Although cryptocurrency lending was already happening it went mainstream midway through 2020. An economic crash resulting from the worldwide pandemic leads to falling interest

rates and lending opportunities plummeting. Investors start looking for other opportunities and crypto is there to pick up the slack.

Cryptocurrency loans give access to fiat currencies, helping to make them a new standard for generating passive income.

### **2021: Market Cap Surpasses \$2 Trillion**

The total market cap of cryptocurrency passes \$2 Trillion USD. Once seen as a speculative experiment, crypto has become a monolith. New ways of using the technology and strategies for generating income are rapidly emerging. Crypto's place in the market is cemented. And while changes are sure to come, there appears to be a lot more growth on the horizon.

## **2. Research Methodology**



## **2.1] What is Methodology?**

Research Methodology is a methodology followed in a particular thesis. A researcher overviews his methodology by using a determined method in which he/she has followed for definite research. This methodology shows a manifest structure of a particular thesis. These reflect how a definite researcher followed his/her methodology. It typically displays the flow of the research paper. It shows the genuine approach towards research. It generally consists of two methods, one qualitative and another quantitative.

## **2.2] Source of Data:**

Sources of data includes primary and secondary data collections focusing on both qualitative and quantitative data. The data collection mechanisms are devised and prepared with their proper procedure.

### **Primary Data:**

The primary data are those, which are collected afresh and for the first time, and thus happen to be original in character. The data on the required information is collected from actual persons using the product/ services. This data is more suited for the objectives of the project. Primary data means when data does not exist, and researcher collects data on its own through various method. The data in this research is collected by conducting a survey by personal communication by questionnaire method.

### **Secondary Data:**

The secondary data refers to data that was collected by someone other than the user. This secondary data sources could be internal and external data sources of information that may cover a wide range of areas. The data in this research is collected through various articles, reports, websites, journal, books, newspaper, etc. The data which have already been collected by someone else or taken from published or unpublished sources and which have already been passed through the statistical process.

## **2.3] Tools & Techniques:**

Tools and techniques mean use of some smart tools. The various statistical tools and techniques are applied for drawing conclusions. Different tables such as frequency table, percentage table, and average tables are used for presentation of the data. The data is also presented in the form of pie diagram and multiple bar diagram etc.

#### **2.4] Aims & Objectives:**

- 1) To study about the evolution of cryptocurrencies.
- 2) To view the consumer perception of cryptocurrencies.
- 3) To analyze the usage of cryptocurrencies and its relation to the growing consumer market.

### 3. Literature Review



Cryptocurrency-scope in India - Dr. Vijeta Banwari Maharaja Surajmal Institute, This paper talks about strengths, weaknesses, Opportunities and Threats of Cryptocurrency and its scope in India. Cryptocurrencies are considered to be profitable investments in the long run. Because of its various advantages: Easy availability, No involvement of any mediator, Fast payments, Low transaction fees and Information privacy. However, Cryptocurrencies also suffer from some weaknesses. Security of data and cryptocurrency has been a major concern. Interestingly, though there is lack of clarity about legal status of cryptocurrency in India, the country may levy Goods and Services Tax on cryptocurrency trading. Central Board of Indirect Taxes and Customs has proposed to levy 18% GST on dealing of cryptocurrency.

Crypto Currency: Awareness Among New Investors –Rahul Chauhan - A financial system is a system that allows the exchange of funds between lenders, investors, and borrowers. Financial systems operate at national and global levels. They consist of complex, closely related services, markets, and institutions intended to provide an efficient and regular linkage between investors and depositors. Money, credit and finance are used as medium of exchange in financial systems. The payment system has gained significance once the countries which are into digitization proved to be more effective in financial inclusion measures. India is stepping in to the leadership role in case of internet stage, as it is dominating many other countries like US in case of internet usage and anticipating a growth in such a way people have more access to mobile than that of electricity connections at home. Indian policies are changing to adapt to the new digital world. India is open to innovation and is expecting a large investment in Indian E-commerce industry. Even though internet comes with many disadvantages India is trying to use its maximum benefits in order to create transparency in the system and that is one of the reasons why Government shifted towards Egovernance. The

aim of this paper is to find out the related literature from the past literature by using the secondary data analysis.

Vora (2015) claims that cryptocurrencies and variants of virtual currencies are a welcome development, they will offer competition to the existing modalities of money and governmental regulation, they will provide alternative means to economic agents for their transactions, and their innovative existence should be encouraged so that their beneficial features outperform any deleterious ones. Bitcoins are here to stay suggest the above-mentioned author, unless considered illegitimate by governments or banned by regulatory actions.

Singh Aarti and Nidhi Chawla (2016) discuss that future of Ecommerce is difficult to predict but there are various segments that would grow in the future like: emerging new technologies, education, awareness regarding new technology and frauds, Reduced search and transaction cost, Reduced process lead-time and faster time to market, Increased customer service, Improved convenience and shopping experience, Increased information transparency, Knowledge generation, Mittal Alka (2017) focuses on merchants and traders who accept this digital currency as a medium of exchange to overcome its problem of volatility. This will boost the market of Bitcoins not only in India but also in other developing economies. This emphasizes that to survive in the system; Bitcoin has to adapt itself to the required technical and operational innovations. In addition to this, government should impose proper legal framework, to protect the consumers or users of these digital currencies, as the progress seen in the transactions in this currency during the past few months is tremendous.

Winston Moore and Jeremy Stephen In this working paper from the Central Bank of Barbados, economists Winston Moore and Jeremy Stephen conclude that holding a small portion of reserve assets in bitcoin could be beneficial to the small island nation. The appropriate portfolio allocation could both improve returns and increase diversity against speculative attacks, without significantly affecting the volatility of the reserve balance. The authors recognize that "digital currency could become a key currency for settling transactions" and that it is necessary for central banks to evaluate their potential impact. This paper is significant because it reveals the emerging worldwide recognition of bitcoin as a useful store of value among central bank authorities.

Cryptocurrency: A New Investment Opportunity? - David LEE Kuo Chuen, Li Guo and Yu Wang - Bitcoin was the first cryptocurrency to use blockchain and has been the market leader

since the first bitcoin was mined in 2009. After the birth of Bitcoin with the genesis block, more than 1,000 altcoins and crypto-tokens have been created, with at least 919 trading actively on unregulated or registered exchanges. This entire class of cryptocurrencies and tokens has been classified by some tax authorities as having the same status as commodities. If cryptocurrency is viewed in the same class as commodities, how different is it in terms of its risk and return structure? This article sets out to help readers understand cryptocurrencies and to explore their risk and return characteristics using a portfolio of cryptocurrency represented by the Cryptocurrency Index (CRIX). Substantial discussions are centred on Bitcoin and its close variants. Some questions are raised about the potential of cryptocurrencies as an investment class. Results show that the return correlations between cryptocurrencies and traditional assets are low and that adding CRIX returns to a traditional asset portfolio improves risk–return performance. Sentiment analysis also indicates the CRIX has a relatively high Sharpe ratio. Although we should view the results with care, a new form of financing for cryptocurrency and blockchain start-ups is born. The disruption brought about by Bitcoin may be felt beyond payments through what is known as initial crypto-token offerings or initial token sales.

The Economics of Cryptocurrencies – Bitcoin and Beyond Jonathan Chiu, Thorsten V. Koepl (2018) - Distributed record-keeping with a blockchain based on consensus through pow is an intriguing concept. The economics of this technology that underlies most cryptocurrencies are driven by the individual incentives to double-spend and the costs associated with reining in these incentives. These costs are private in the form of settlement delay and social in the form of mining which is a public good. Consequently, as the scale of a cryptocurrency increases, it becomes more efficient. This explains why a double-spending proof equilibrium exists only when the user pool is sufficiently large, and why a cryptocurrency works best when the volume of transactions is large relative to the individual transaction size. This insight seems to be very much ignored in the current debate, but puts scalability of cryptocurrencies front and centre as the main technological challenge to be overcome. Our exercise shows that cryptocurrency systems can potentially be a viable alternative to retail payment systems, as soon as some technological limits can be resolved.

## **4. Data Analysis, Interpretation and Presentation**



### **Introduction To Analysis:**

In order to extract meaningful information from the data them. The analysis can be conducted by using simple statistical tools like percentages, averages and measures of dispersion.

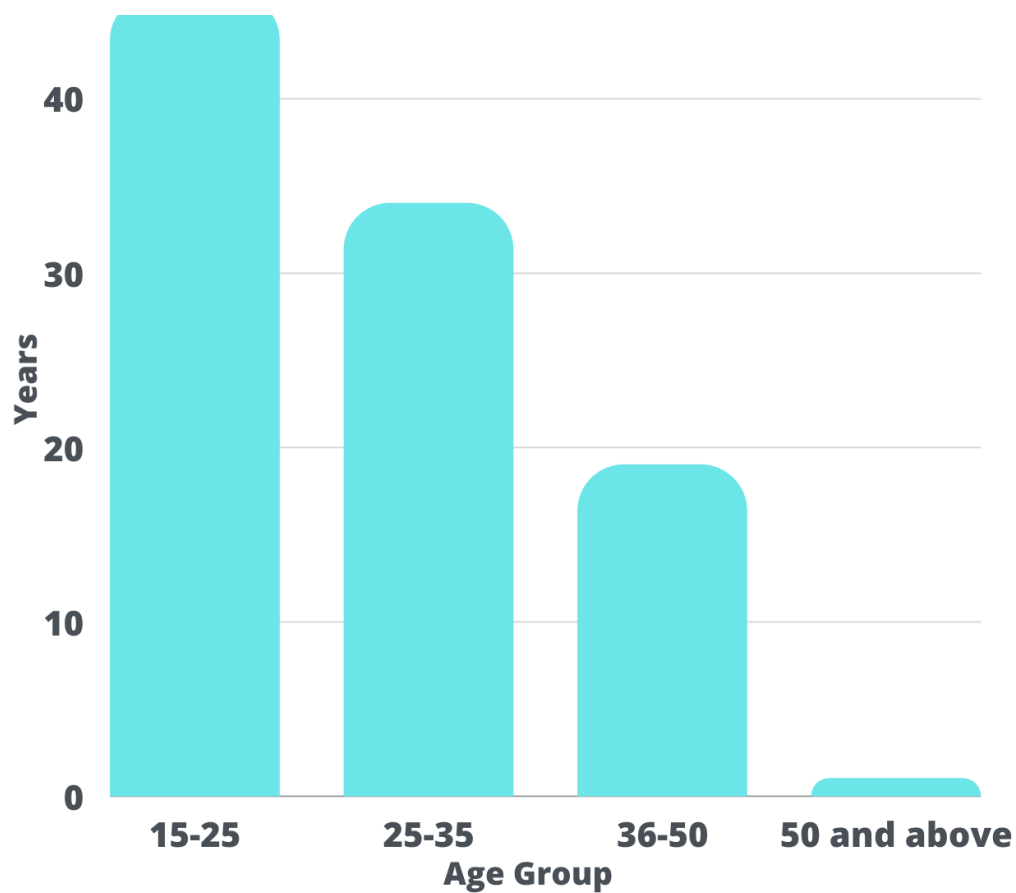
Alternatively, the collected data may be analysed, the data analysis is carried out. The data are first edited, coded and tabulated for analysing by using diagrams, graphs, charts, pictures etc. Data analysis is the process of planning the data in an ordered form, combining them with the existing information and extracting from them. Interpretation is the process of drawing conclusions from the gathered data in the study. In this research the researcher has analysed the data using percentages and graphs.

### **Data Analysis Tools Used:**

In this research the data analysis tools used are percentages and graphs. The various attributes were analysed separately and the importance to each was calculated on the basis of the percentage. The rank having the maximum percentage was taken to be preferred importance to the particular attribute. After looking at each attribute separately, all the attributes were considered together to develop a map on the most preferred rank for all the attributes.

### 1] Age Group:

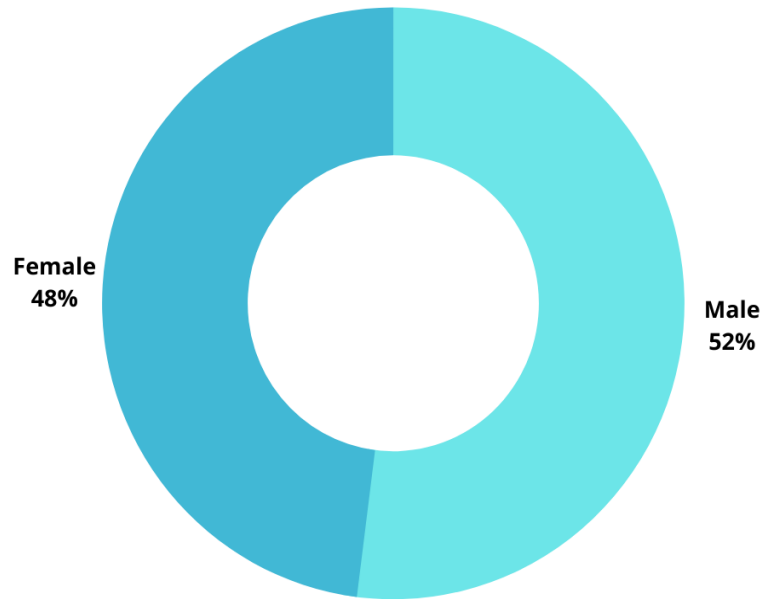
- 15-25
- 25-35
- 36-50
- 50 and above



According to the analysis, 46% of the respondents, belong to the age group of 15 – 25 years. This age group has the maximum number of respondents. The next age group of 25-35 years has 34% of the responders. The next age group of 36-50 years has 19% of respondents. The age group of 50 years and above has 1% of the total respondents.

## 2] Gender:

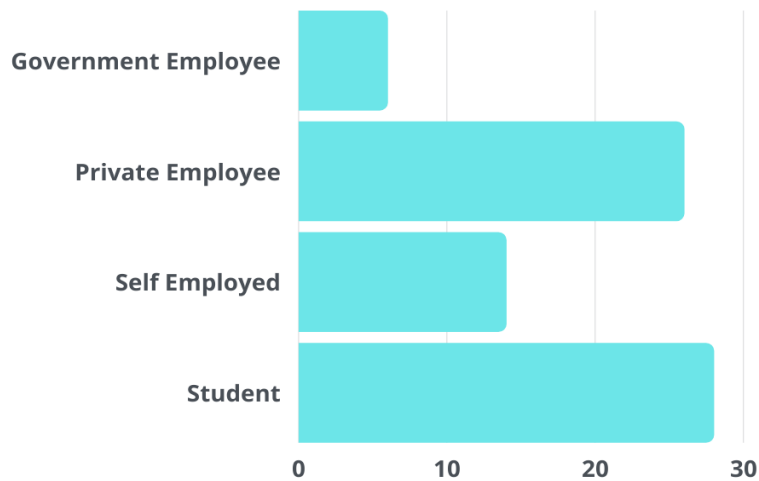
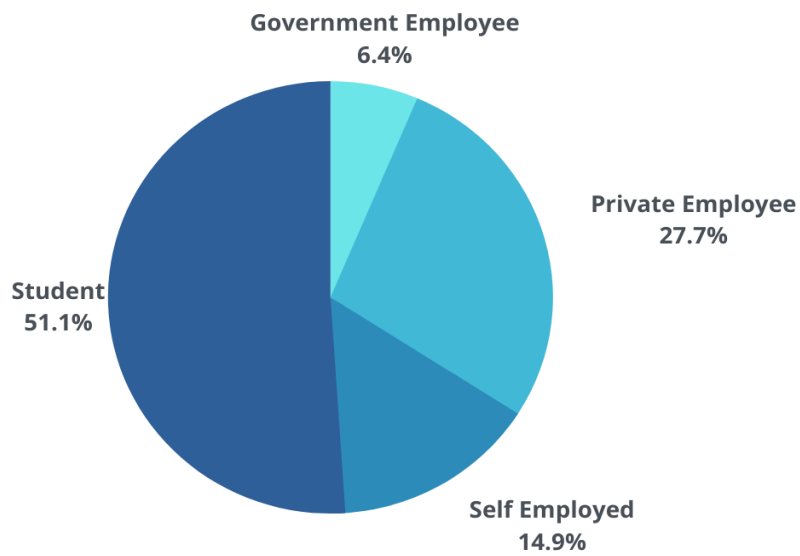
- Male
- Female



According to the analysis, 52% of the respondents are male and 48% of the respondents are female.

### 3] Profession:

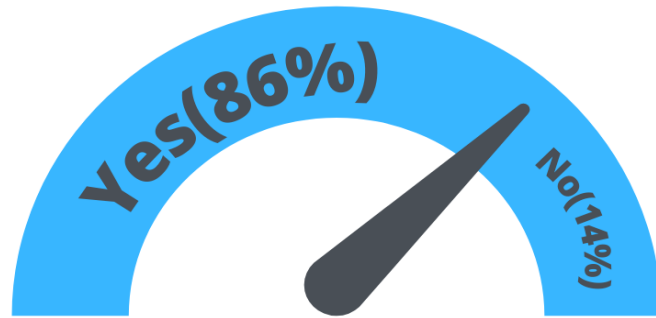
- Government Employee
- Private Employee
- Self Employed
- Student



According to the analysis, 51.1% of the respondents, are Government Employees. This profession has the maximum number of respondents. The next age group of 25-35 years has 34% of the responders. The next age group of 36-50 years has 19% of respondents. The age group of 50 years and above has 1% of the total respondents.

#### 4] Do you know what are cryptocurrencies?

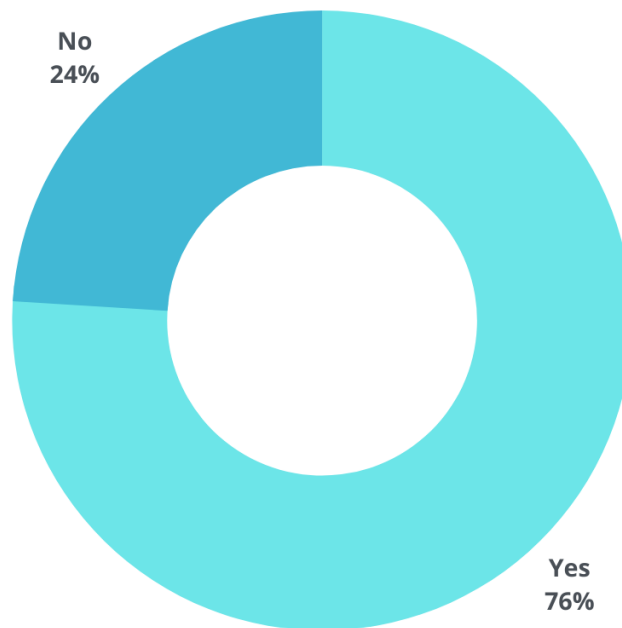
- Yes
- No



According to the analysis, 86% of the responders know what are cryptocurrencies. The remaining 14% of the responders have little to no knowledge about cryptocurrencies.

### 5] Have you used cryptocurrencies?

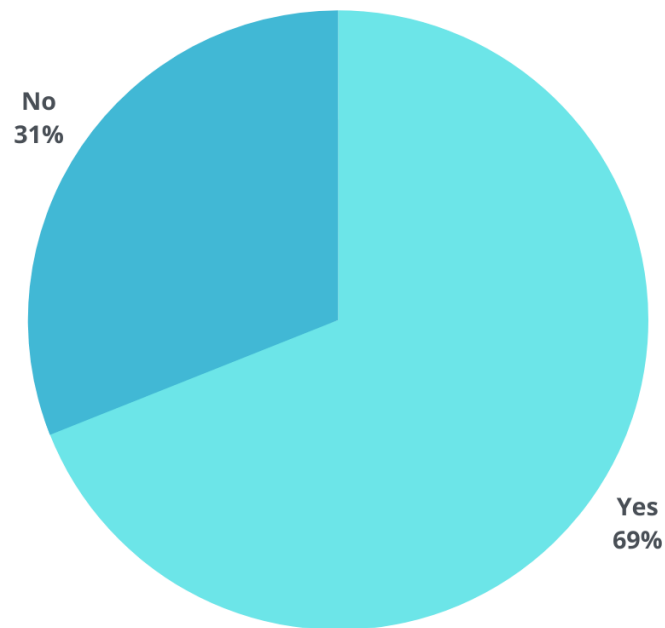
- Yes
- No



According to the analysis, 76% of the responders have used cryptocurrencies. The remaining 24% of the responders have not used cryptocurrencies.

**6] Are you aware about cryptocurrencies other than bitcoin?**

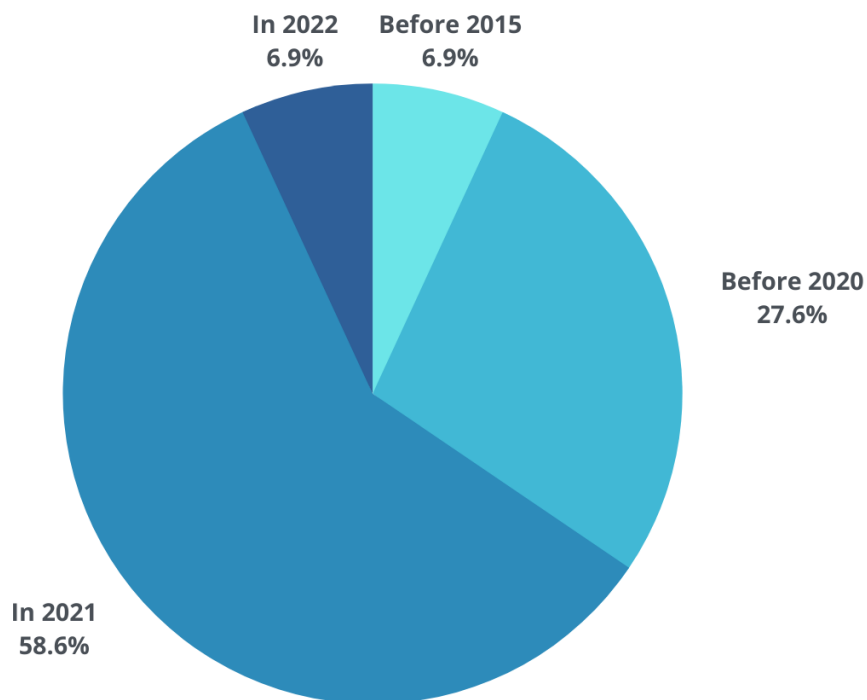
- Yes
- No



According to the analysis, 69% of the responders are aware about cryptocurrencies other than bitcoin. The remaining 31% of the responders are not aware about cryptocurrencies other than bitcoin.

**7] In which year did you hear about various crypto currencies?**

- Before 2015
- Before 2020
- In 2021
- In 2022

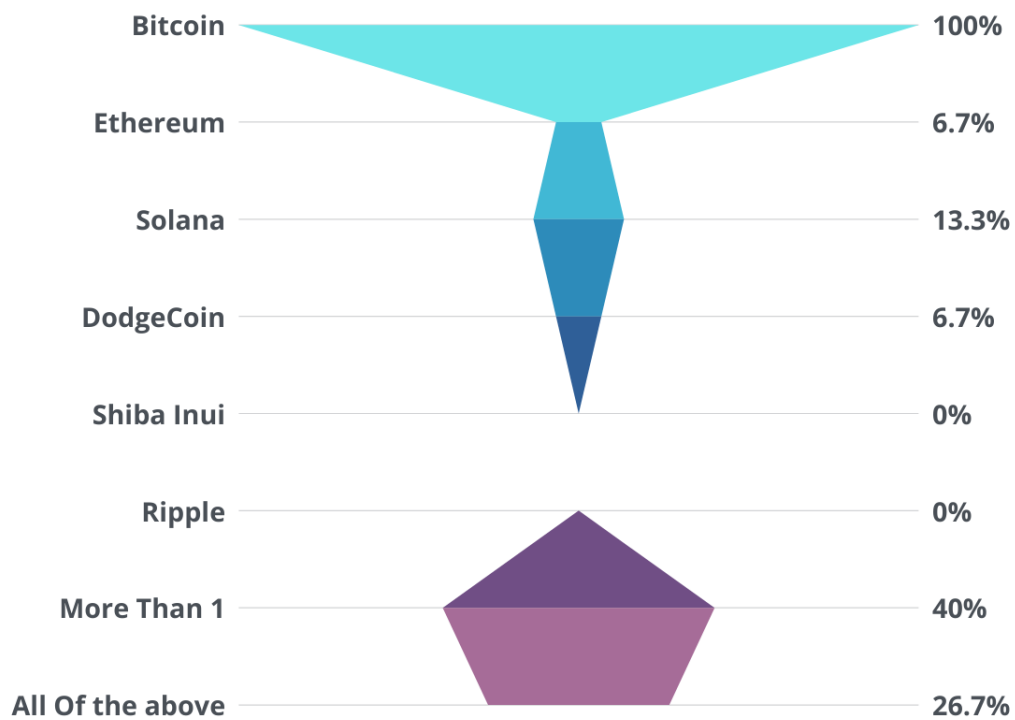


According to the analysis, 6.9% of the respondents have heard about cryptocurrencies before 2015. 27.6% of the responders have heard about cryptocurrencies before 2020.

The maximum number of responders have heard about cryptocurrencies in 2021. Within only 3 months, 6.9% of the respondents have heard about cryptocurrencies in 2022.

### 8] Which Crypto Currencies have you heard of?

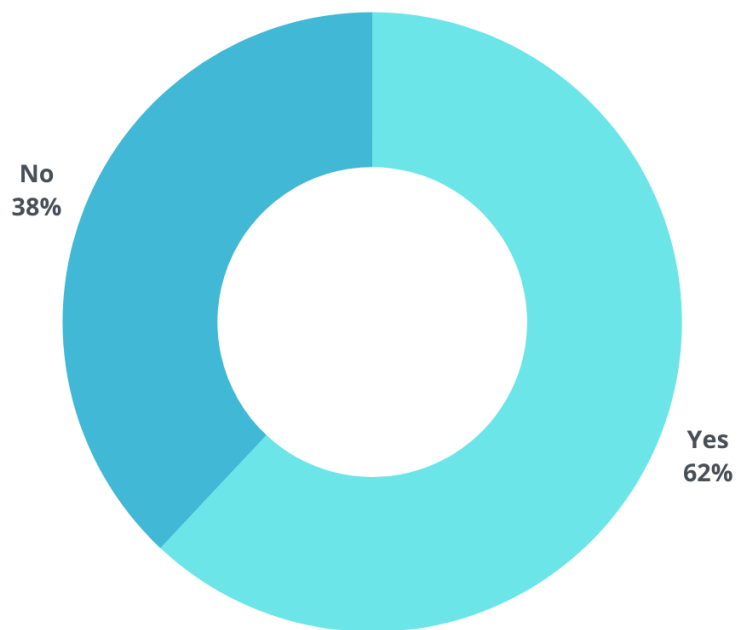
- Bitcoin
- Ethereum
- Solana
- DodgeCoin
- Shiba Inui
- Ripple
- More Than 1
- All Of the above



According to the analysis, this is the funnel chart for the people who have heard about various cryptocurrencies.

**9] If given a chance would you use Crypto for transactions?**

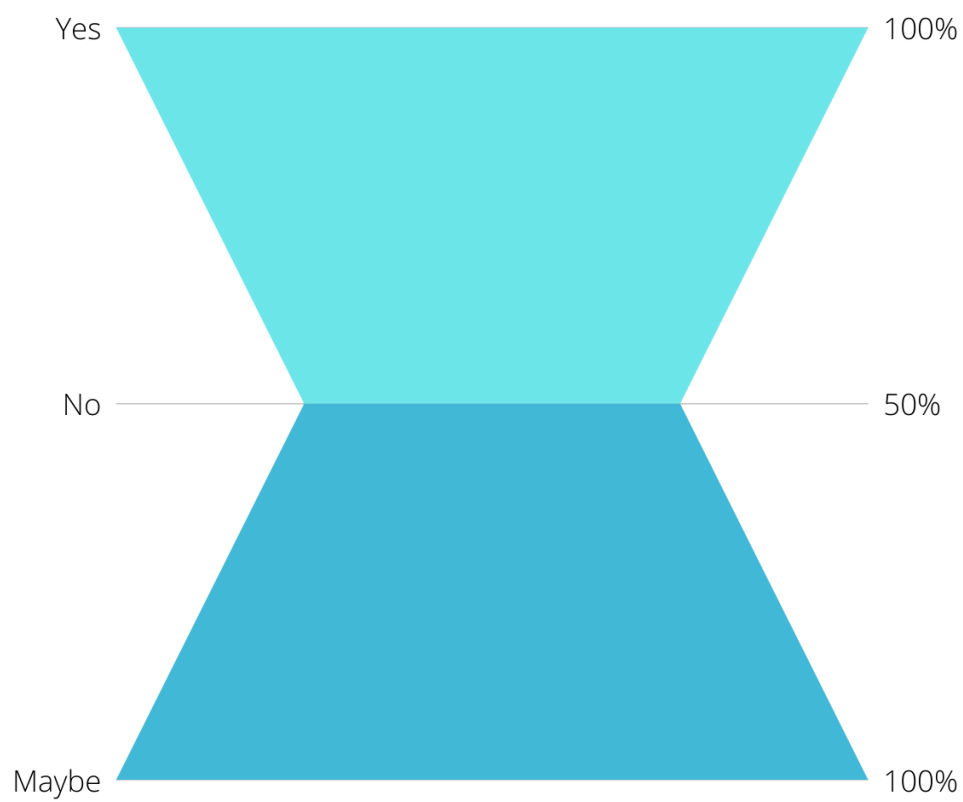
- Yes
- No



According to the analysis, this is the number of respondents that would or would not use cryptocurrencies for transactions.

**10] Do you think a switch can be made from physical cash to crypto?**

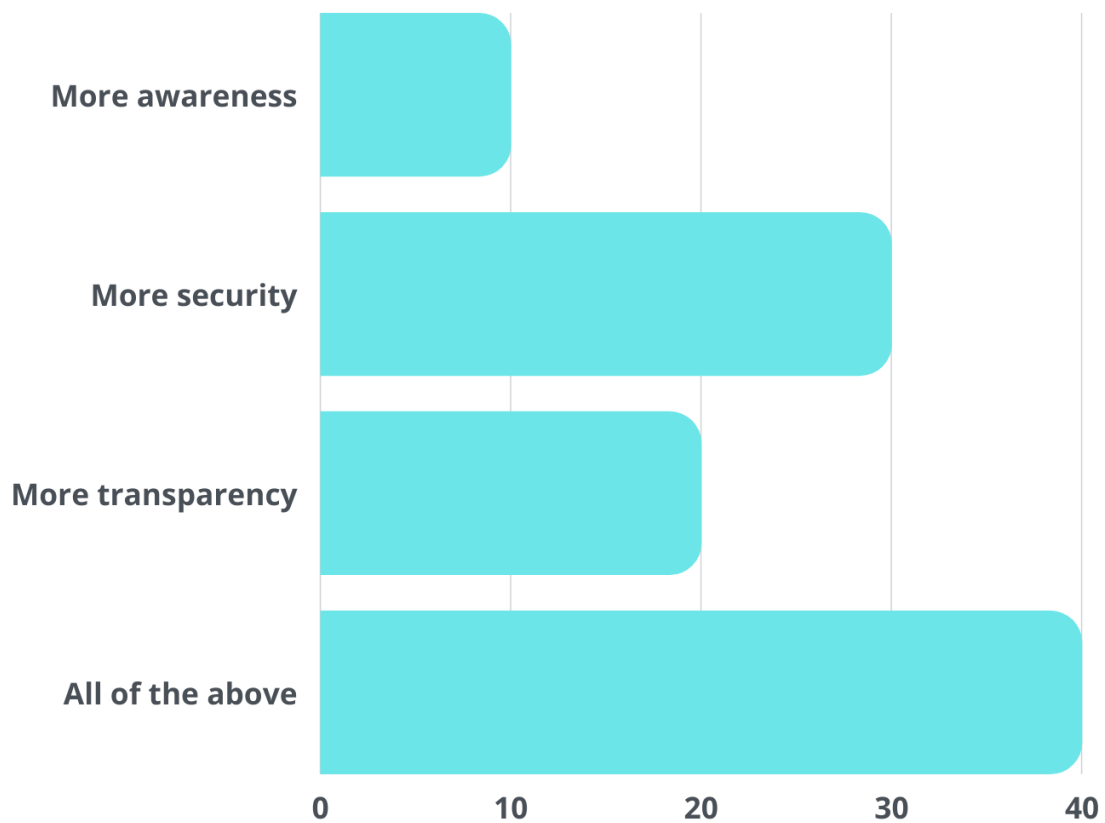
- Yes
- No
- Maybe



According to the analysis, this is the number of respondents that think a switch can be made from physical cash to crypto. It also has a number of respondents who are undecided.

**11] What do you think is required for people to be able to use crypto without any hesitation?**

- More awareness
- More security
- More transparency
- All of the above



According to the analysis, this is the recommendation of the respondents about various issues faced.

**12] Is crypto gaining more popularity day by day?**

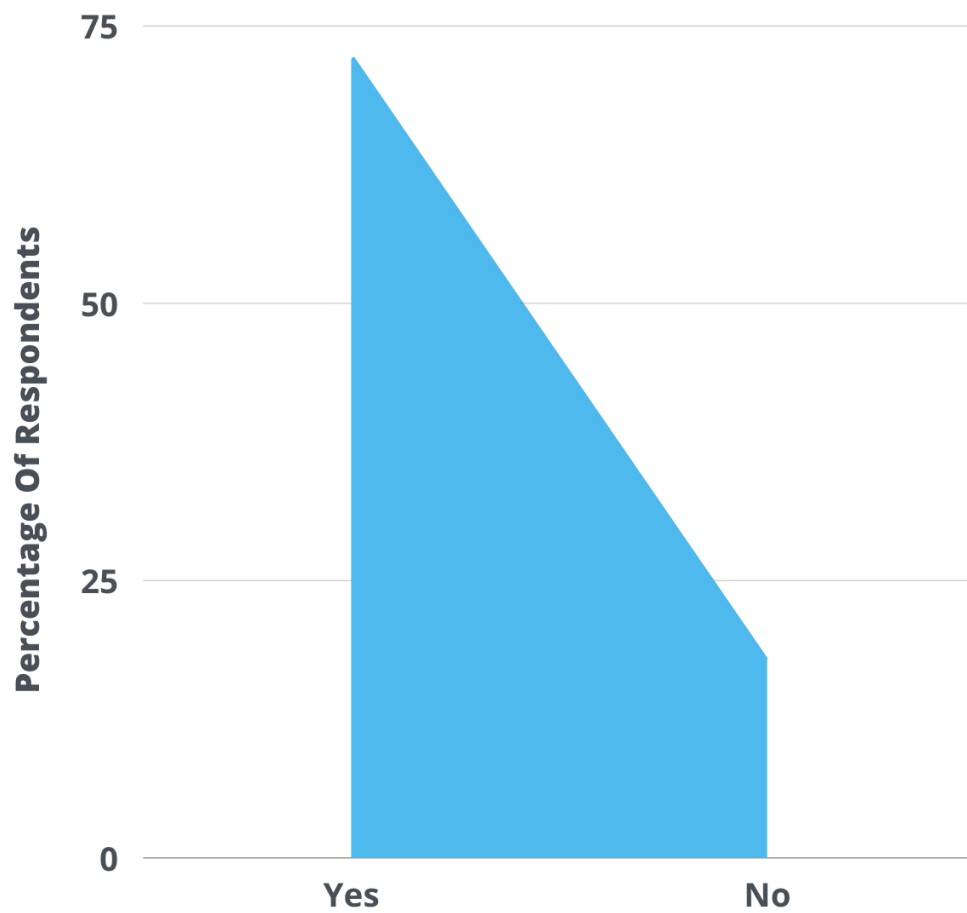
- Yes
- No



According to the analysis, this is the percentage of respondents that think crypto gaining more popularity day by day.

**13] Will cryptocurrencies become a necessity in the near future?**

- Yes
- No



According to the analysis, this is the percentage of respondents that think cryptocurrencies become a necessity in the near future are close to 75%.

## 5. Conclusion



### **Cryptocurrency Market Size Forecast to 2026 With COVID-19 Impact Analysis:**

The COVID-19 pandemic has had a huge impact on the global economy. With the virus spreading across 188 countries, a number of businesses were shut down and many people lost their jobs. The virus mostly affected small businesses, but large corporations felt the impact as well. Apple closed all of its stores outside of China temporarily and Bloomingdale's did the same with all of its 56 locations. Against the backdrop of the uncertainty raised by COVID-19, Bitcoin, Ethereum, and other digital currencies have garnered significant attention. Even banks have started buying crypto for the first time. Banks in the US are creating their own blockchain-based systems, including digital currencies, to enable B2B cryptocurrency payments between their customers. Also, in October 2020, PayPal announced that its customers will be able to buy, sell, and hold Bitcoin and cryptocurrencies using their PayPal accounts, allowing customers to buy things from the 26 million sellers who accept PayPal, in 2021, PayPal is planning to allow cryptocurrency to be used as a funding source.

## **Cryptocurrency market dynamics**

### **Driver: Transparency of distributed ledger technology**

Issues related to lack of transparency arise when transactions take place without the knowledge of stakeholders, especially in Asian countries where several instances of fraudulent or unwanted transactions, such as deduction of scheduled charges, are frequently observed. This may be caused by human error, machine error, or data manipulation during the transaction process, and may result in customers losing huge amounts of money. Moreover, in most cases, financial institutions do not accept their fault. This lack of transparency in the current monetary system leads to dissatisfaction among the public.

### **Restraint: Uncertain regulatory status**

The cryptocurrency market is not yet regulated. At present, the lack of regulations and the uncertainty regarding the same are among the major factors restraining the adoption of cryptocurrencies. While financial regulatory bodies across the world are working to find common standards for cryptocurrencies, regulatory acceptance remains one of the biggest challenges. As the distributed ledger technology is still in the nascent stage, it raises a number of questions for regulators and policymakers at national and international levels.

### **Opportunity: Significant growth opportunities in emerging and developed markets**

Emerging economies (such as India, China, and Brazil) and developed countries (such as the US, Germany, and Japan) are expected to offer significant growth opportunities for companies operating in the cryptocurrency market. For instance, in 2020, Brazilian crypto companies have signed a code of self-regulation that aims to legitimize and boost the adoption of crypto assets in the country. The document was signed under the auspices of Abcripto, the country's association of cryptocurrency companies. The objective of the agreement is to establish operational practices and compliance standards that all members must adhere to. The country's prominent cryptocurrency firms that signed the code include Foxbit, Ripio, Bitcoin Market, and Novadax.

### **Challenge: Concerns regarding security, privacy, and control**

Cryptocurrency has the potential of transforming and revolutionizing compliance-free peer-to-peer and remittance transactions; however, end users have to overcome certain challenges related to security, privacy, and control to benefit from cryptocurrency. As cryptocurrency transactions are recorded in the distributed public ledger known as blockchain, hackers have a large attack surface to gain access to critical and sensitive information. If this public ledger is used to store confidential contract-related information or payment data, replicating the file could potentially make it easier for hackers to access it. If a key is compromised, it can be used to access the database in a hub-and-spoke model as well as in a distributed database.

## **Value Chain Analysis**

### **Cryptocurrency Market**

#### **Hardware to hold largest size of Cryptocurrency market in 2021**

The concept of cryptocurrency is based on decentralizing the monitoring of transactions. In the transaction monitoring process, miners (generally the users) validate the transactions made by other users. In this process, the system needs high computing power to validate the transactions. The validation process involves the creation of hash codes to encrypt the transactions. To generate a hash code, the miner needs highly effective and efficient hardware. In other words, to get new blocks and solve them, miners need to generate as many hash codes as possible. Miners get rewards through mining. Mining rigs are available in several shapes and sizes. The cryptocurrency market for hardware has been segmented, on the basis of processor, into GPUs, central processing units (CPUs), FPGAs, and ASICs.

## **Mining process to hold largest share of Cryptocurrency market in 2021**

Mining is an integral process for the generation, transmission, and validation of transactions in cryptocurrencies. It ensures stable, secure, and safe propagation of the currency from a payer to a receiver. Unlike fiat currency, where a centralized authority controls and regulates the transactions, cryptocurrencies are decentralized and work on a peer-to-peer system.

APAC to grow at highest CAGR during the forecast period

In terms of value, APAC to grow at highest CAGR during the forecast period. This market in APAC has been studied for China, Japan, South Korea, and Rest of APAC (RoAPAC). RoAPAC includes Singapore, Malaysia, Thailand, India, Australia, and New Zealand. China is the largest market among all APAC countries. Owing to the low cost of electricity, and presence of big mining companies.

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**\*\*\*The End\*\*\***