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AN OPINION-BASED RESEARCH ON CRYPTOCURRENCY AND IT'S FUNCTIONING IN INDIA.

RAHI DHOND, SHANTANOU GANGAKHEDKARR, SHREYA SIDDANAGOWDER

Abstract:

This paper aims to analyse the crypto market in India from the viewpoint of consumers who could potentially trade in these markets and extend the extent of their behaviour to the importance of a regulatory body within the economy. The central idea of this paper is to estimate the importance of a central bank in the minds of people and how it affects their trust on a currency which is unregulated. This forms the first tier of the paper

In order to get insight into the more technical dynamics of cryptocurrencies, the paper then studies cryptocurrency from the point of view of experts who explain the different dimensions of the crypto markets. This forms the second tier of the paper.

The paper aims to analyse from the surveys conducted and the available literature, the nature of the crypto market in India with a more reporting approach than a problem-solving model.

The research is based on primary data collected by means of surveys and structured interviews. These are termed as the two tiers in the paper. Using quantitative statistical analysis to find the common trend of the sample and a descriptive approach for the analysis of the interviews, the paper examines how the two tiers behave single-handedly and their dynamic when they interact.

Keywords:

Cryptocurrency, Governance, Digital Currency, Digitization, Central Bank Digital Currency, Regulation, Investment and Regulation

JEL Classification: L51, G18, O38

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REVIEW OF LITERATURE.

The determinants of citizens' trust in the European Central Bank during the start-up phase from 1999 to 2004 are examined in the research "*Determinants of Trust in the European Central Bank*" (Fischer & Hahn, 2008). It is found that higher inflation rates lower trust using a country panel based on the Eurobarometer survey. Using information search, demographic, psychological, and involvement characteristics to assess survey findings from investors in the United States, in "*Investment Information Search*" (2008), Loibl & Hira, analyse the role of information search in investments. Cluster analysis reveals five types of investor information search based on information sources. The goal of the research done in "*The effect of Cryptocurrency Investment on Portfolio Effectiveness.*" (Andrianto & Diputra, 2017) is to determine the effects of cryptocurrency on well-formed portfolios. Foreign currency, commodity, stock, and ETF are the assets used by the authors. They use the Modern Portfolio Theory technique for analysis. The findings demonstrate that including cryptocurrency in a portfolio boosts its effectiveness in two ways. The first is to reduce standard deviation, and the second is to provide investors with more allocation options. A detailed paper on what is restricting or causing a hindrance for Bitcoin to be accepted worldwide "*Is Bitcoin a real currency?*" (Yermack, 2013). Its instability and aloofness from systems is mainly a function of the instability it showcases within a very short span of time and this must be eliminated in order for a more wide acceptance of this currency. In "*Theory and Reality of Cryptocurrency Governance*" (Spithoven, 2019), Antoon Spithoven investigates cryptocurrency ecosystems using Elinor Ostrom's self-governance meta-framework concluding that while Bitcoin falls short of its self-governing objectives. Regulating and supervising by trusted third parties is necessary. The study "*Cryptocurrency: Is the future dark or bright?*" (Javed, et al., 2019), follows and evaluates a published research. Financial risk, market risk, liquidity risk, and operational risk are the primary parameters identified by the investigation, and these are the parameters that influence cryptocurrency values.

According to Nathan Schneider in "*Decentralisation: an incomplete ambition*", (2019), decentralisation is a concept commonly used in political science and Internet debate. It has to be correctly specified and there must be presence of ambiguity. "Even seemingly decentralised institutions can generate economically and structurally centralised outcomes" is an important finding that is consistent with this paper. In "*Hacker-engineers and Their Economies: The Political Economy of Decentralised Networks and 'Cryptoeconomics'*" (Brekke, 2020), hacker-engineers are agents in the economy that primarily the driving of peer networks and blockchains which form the basis for cryptocurrencies.

Cryptocurrency liquidity, herding behaviour, and profitability are examined in this study "*Cryptocurrency liquidity during extreme price movements: is there a problem with virtual money?*" (Manahov, 2020), is a research giving special reference to the herding behaviour pattern found within crypto investors, this study is relevant to the paper. The paper concludes that it is infact the traders in this market that contribute to fluctuations in price. "*The novel secure testament methodology for cryptocurrency wallet using mnemonic seed*" (Janpitak, Lilakiatsakun &

Sathitwiriya Wong, 2020) mentions the solutions for two problems that arise due to the security provided by crypto assets and the mnemonic seed – or the password required to access a particular wallet. In *“Decentralized Finance” (Zetzsche, Arner & Buckley, 2020)*. Decentralisation, as a concept is more promising when it comes to security. As long as infrastructure and regulatory structural framework are robust, with the assistance of regulatory technology, traditional forms of accountability, financial regulation and implementation according to the authors, will not be necessary. In *“A Review on Cryptocurrencies Security” (T. M. Navamani, 2021)*, is a research delving into security and privacy and how they are connected to cryptocurrencies. In *“Risks and Returns of Cryptocurrency”, Liu and Tsyvinski (2021)* show that cryptocurrency profits are influenced by and may be anticipated by characteristics unique to cryptocurrency markets. It is also found that returns on cryptocurrencies are affected by cryptocurrency network characteristics, but not by cryptocurrency production factors.

In *“Assessing the variability of crypto collateral assets in secured lending on the blockchain” (Masilela, Wyk & Marwa, 2021)* the authors study the variation of cryptocurrencies as non-traditional assets on the financial market and how lending takes place in blockchain networks. Studying the riskiness of these assets using volatility, the study concludes that as much the probability of traders losing money, equal is the probability of them earning profits since the variance of these assets is equal to 1.

In the paper *“A Generalization of the Paired T-test” (Rosner, 1982)* is the original paper proposed for the concept of applying Student’s T-distribution to the data of a group analysed across two variables. The test is paired because. Although surveys are a very prevalent technique of research, they are not a simple alternative. In *“Personal opinion surveys” (Kitchenham and Pfleeger, 2008)* are used to highlight the six critical stages of research that collects primary data by means of surveys. objectives; appropriate survey design; survey instrument development such that it is reliable and valid and then employing it; analysis of the data. According to *Sillars, David & Hallowell, Matthew in “Opinion-Based Research: Lessons Learned from Four Approaches” (2009)* choosing an acceptable technique of study is a vital step in any thorough research endeavour. Choosing the correct methodology must be in adherence with the scope of the research and should be selected such that the data collected will be all encompassing in terms of what the researcher is looking for. The authors stress on the need for the appropriate methodology because it points in the direction of intervention and suggestions. In *“Collective Action as the Material Expression of Opinion-Based Group Membership” (McGarty, Craig; Bliuc, Ana-Maria; Thomas, Emma; Bongiorno, Renata, 2009)* success in collective action research depends on a more sophisticated social identity approach. The paper concludes that results from opinion-based groups are successful when the individuals involved tend to see themselves are positive and contributing influences on the society.

METHOD OF PROCEDURE:

1. The planned design of the study is of analytic nature for which a two-tiered approach was taken.
2. The first tier was by means of **survey method**^{20,21,22} which were conducted with experts and enthusiasts in the field of Cryptocurrency and Economics with the aim of connecting two approaches for a more encompassing assessment.
3. The second tier was by **interview method**²¹ that was conducted amongst the end-users of Cryptocurrency.
4. The way that the study goes is by using the existing knowledge on cryptocurrency and attaching its relevance to the meaning of assets and exploring how cryptocurrency is different from regular assets.
5. The circumstances under which there is possibility of cryptocurrency performing the function of a medium of exchange, too, will be held within the scope of this study.
6. By pooling together, the solid knowledge of the experts in the fields of cryptocurrency, finance and economics and bring it together with the beliefs of the consumers, a combination of exploratory and analytical interest, this study finds the nature of Cryptocurrency in India.

TREATMENT OF DATA:

The data will be treated quantitatively for the *First Tier*.

The survey gives answers selected by individuals. Thus, even if opinion based, the research is not entirely qualitative; thus, the data derived from the survey shall be treated statistically.

For two separate variables calculating willingness of risk, the Paired t-Test shall be used as it states the dependence of choices between two opinions given by the same person.

The responses of the following questions will be selected:

1. Do you invest in Cryptocurrency
2. Do you prefer Fixed Deposits (FDs)/Recurring Deposits (RDs) (*referred to as time deposits henceforth*) over stocks?

The answers, being in the form of Yes/No, will then be converted to 1 and 0 respectively.

The differences between the two variables will be taken. The mean (μ) and standard error (S.E.) of the differences will be computed and the computed t-value (t_{comp}) will be found by dividing the former by the latter.

Using (n-1) degrees of freedom, where n=101 and the level of significance is 5%, the critical value of t will be calculated to determine where t_{comp} lies with respect to the critical value of t.

From this, one can then decide whether to reject or to accept the null hypothesis.

To further verify the findings, a test on independence of attributes will be conducted.

The *second tier* will be treated qualitatively.

Qualitative research is a research methodology that utilises "quality" or opinion-based research to arrive at study conclusions. For the *Second Tier*, the interview method of data collection was chosen. The reason behind this was that the study which is based mainly on evaluating Cryptocurrency requires expert opinions as it will help with comprehensive research. The significance of the Interview Method is that the researcher(s) can amend and modify questions as per the need of the study. There is a great scope of exchanging questions and acquiring qualitative opinions.

Total number of interviewees: **13**

The *Second Tier*, which consisted of structured interviews gives the information collected from the interviewees will be compiled and added to existing literature in order to reach conclusions.

SAMPLE SELECTION:

The study has two tiers - *The First and The Second*

The end-consumers of the technology form one part, or as this study calls it- 'The First Tier' of the study.

'The Second Tier' consists of experts broadly categorised into two categories:

- (a) Individuals who work in/for cryptocurrency oriented and/or blockchain organisations; and
- (b) Individuals who are experts in the field of economics.

The thought behind this kind of sample selection in this tier was to understand cryptocurrency as a technology and as a financial tool which could potentially cause some kind of ripples in the economy.

METHODOLOGY:

1. The samples are taken in a way that they form two tiers.
2. Sample selection was done in a way that the study would be analysed from two different ends such that the point of views of the users of cryptocurrency and of the experts in the field of cryptocurrency and/or economics would be taken into consideration.
3. The reason behind a dual approach was to analyse from the approach of the proponents of cryptocurrency and from the approach of the individuals who will be using it but are relatively newer to the field.
4. After collecting the data, the two tiers will be studied separately.
5. First, the data from the first tier will be presented in the form of graphs and charts as it is being treated quantitatively.

6. Then the data from the second tier will be presented and treated qualitatively as it is in forms of elaborated question and answers.
7. The data from each will be studied separately so as to draw separate inferences.
8. Finally, the separate inferences shall be pooled together to analyse how the data from the two tiers complement each other to reach conclusions and recommendations, accordingly.

PRESENTATION OF FINDINGS:

FINDINGS BASED ON THE FIRST TIER:

I. The First Tier:

A concise survey was devised and rolled out to potential consumers - the common population.

The individuals who have answered the questions are from the country of India and their answers are strongly affected by the knowledge and financial freedom available to them. There are two main factors for which the opinions of consumers are centric to the study:

- i) The average risk consumers are willing to take with respect to their investments.
- ii) Their trust in the Central Bank of India - The Reserve Bank of India

Given below are the data collected and presented in the form of graphs and charts. These summarise the answers given by the end-consumers in the survey. On the basis of the answers received, conclusions have been drawn about the **First Tier**.

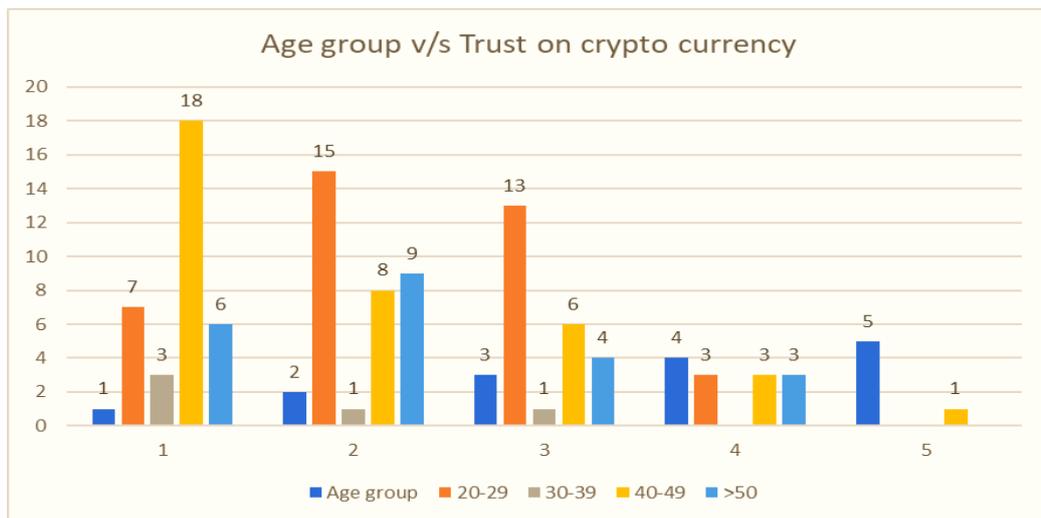


Figure 1 Age group vs Trust on Cryptocurrency

*The age group factor was included in the study in order to study the trends amongst the sample and how the age factor comes into play with respect to financial decisions, particularly, with respect to Cryptocurrency. It is seen in this that, from **1- lowest trust** to **5-highest trust**, an almost negligible amount of individuals have a high level (4 or 5) trust in the currency.*

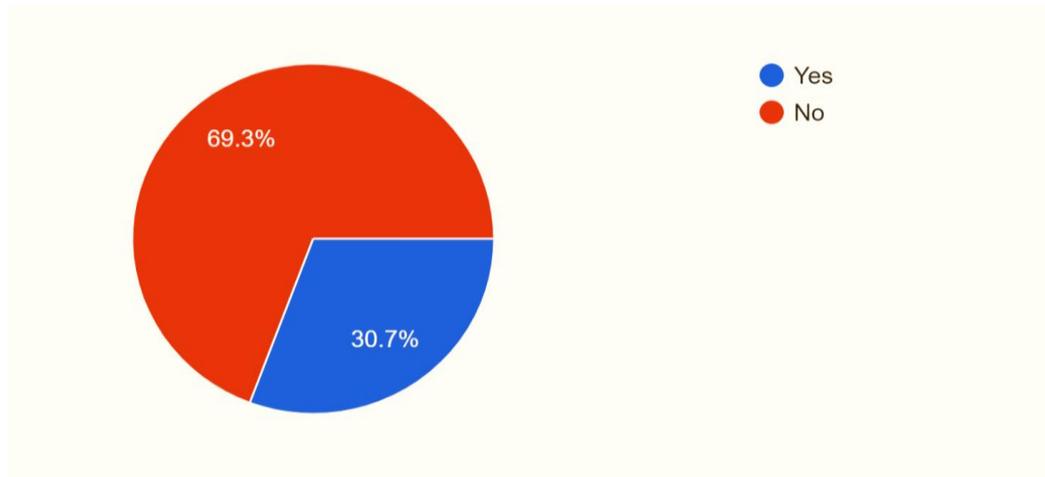


Figure 2 Willingness Of Risk

The factor of risk is weighed with the help of Time deposits (time deposits) against the stock market. The pie chart shows a preference for the stock market over the safer time deposits. This implies that the majority of the sample is not extremely risk averse.

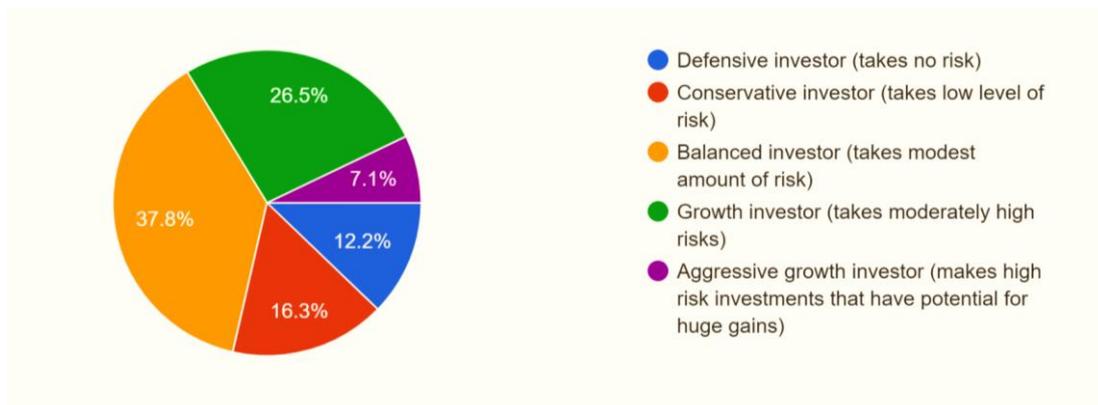


Figure 3 Nature of Investors

Majority of individuals in the sample claim to be Balanced Investors- individuals who take reasonable risk and do not find themselves either too conservative or too risk-taking.

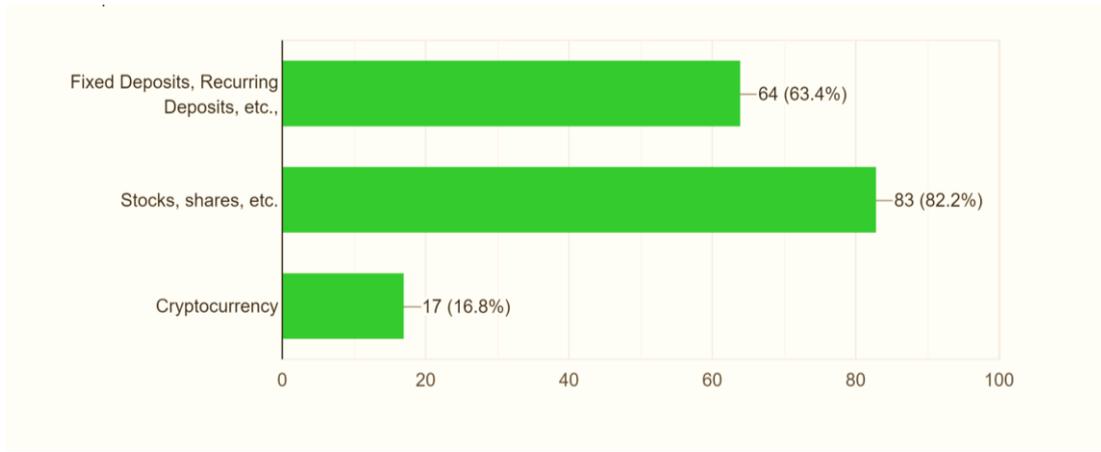


Figure 4 Nature of Portfolio

Broadly categorising investment portfolios into time deposits, Stocks and Shares, and Cryptocurrency. The graph shows that only about 16.8% of the sample has Cryptocurrency in their investment portfolio.

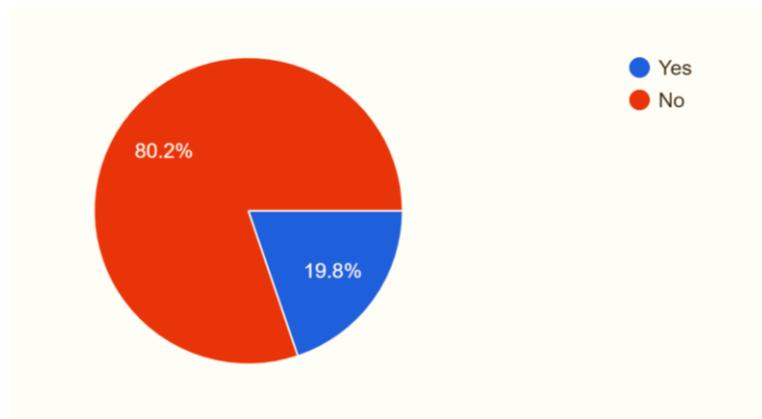


Figure 5 Do a lot of individuals invest in Cryptocurrency

A very important number to be noted here: About 80.2% individuals do not invest in cryptocurrency. Interpreting for the sample, 81 of 100 individuals do not invest in cryptocurrency.

RESULTS OF PRIMARY RESEARCH:

The results of the survey are given below. The findings about the First Tier are as follows:

• WILLINGNESS OF INDIVIDUALS TO TAKE RISK WITH RESPECT TO THEIR INVESTMENTS:

1) Time Deposits or Stocks *vis-à-vis* the Willingness of Risk:

a) When asked whether they prefer Fixed Deposits which are relatively safer forms of saving their money and earning minimal interest rate over the stock market, majority individuals denied that time deposits be chosen over the stock market.

b) The survey shows that individuals prefer the stock market for investment rather than keeping their money in the stock market. Most individuals claim to be 'Balanced' and 'Growth' investors.

The balanced investors are particularly those who made educated and informed decisions about their investments. The balanced investors are those who put together investment information most often and utilise the highest number of information sources; they also have highest involvement in investments over time and take the most "diligent" investment actions (Loibl & Hira, 2009)³. Modern Portfolio Theory (MPT) states how an investor with a high risk aversion value can develop an investment portfolio to maximize return based on existing market risk (Andrianto & Diputra, 2018)⁴

c) Even though individuals' decisions to invest in stocks is influenced by premiums of the stocks, it is found that growth investors in particular favour growth in the longer run over the value stocks (Loibl & Hira, 2009)². From this, it can be understood that growth investors will not invest in assets which are highly volatile and incentivising high returns in a comparatively lesser amount of time.

2) Investment in Cryptocurrency *vis-à-vis* Fixed Deposits or Stocks:

a) Under this point, the analysis is mainly about how many individuals who prefer stocks over fixed deposits also prefer investing in cryptocurrency.

b) For this, the Paired t-Test (Brosner, 1982)^b was used with level of significance = 5%

c) The null hypothesis is that preference of individuals for stocks (over FDs) is irrelevant to the probability of them investing in cryptocurrency.

d) The alternate hypothesis is that the individuals investing in cryptocurrency (having natural comfort towards high risk) are also those who prefer stocks over Fixed Deposits.

H₀: Individuals' preference of stocks over time deposits has nothing significant to do with investing in cryptocurrency ($\mu=0$)

Against

H₁: Individuals who prefer stocks over time deposits, do prefer cryptocurrency as investment. ($\mu\neq0$)

e) With 100 degrees of freedom ($n-1=101-1$) and 5% level of significance, computed t-value = **-2.752...**(1)

f) To find the computed value of t, first the data was categorised based on two questions
-Do you invest in Cryptocurrency?

-Do you prefer FDs/RDs over the stock market?

g) The mean (μ) was found to be **-0.1584** and the standard error was found to be **0.5785**.

h) $t_{comp} >$ critical t-value, $|t| = 2.752 > 1.895$ at 5% I.o.s. ... (2)

i) We accept the alternate hypothesis and infer from (1) & (2) as follows – The individuals who prefer investing in the stock market, also have a natural inclination towards investing in cryptocurrency. The data from the sample, thus approves that it is only the individuals preferring moderate risks, i.e., investments in stocks over time deposits (a secure form of locking away money), prefer investing in cryptocurrencies.

j) Rejecting the null hypothesis in this case implies that individuals' preference to take relatively higher risk does in fact have implications with respect to their decision to include cryptocurrency in their portfolio.

k) Yet, majority of the individuals showing a preference for investing in stocks do not show a preference for investing in cryptocurrencies. According to the sample collected, only about 24% of individuals investing in stocks also prefer cryptocurrencies to be a part of their investments. In other words, more than 75% of stock market investors show an aversion to cryptocurrencies, even though they are most likely to invest in the crypto market.

l) Out of the total sample, about 70% people invest in stock markets but only about 18% people prefer investing in cryptocurrencies.

m) Using the test of independence of attributes with 95% I.o.s., $\chi^2_{comp} = 5.02 > \chi^2_{(1,0.05)} = 3.841$ implying that the hypothesis of no difference is to be rejected; accepting the alternate hypothesis shows that there, in fact, is a relationship between a preference for stocks/time deposits with respect to investing/not investing in cryptocurrencies. This is shown in fig. 6

	1	0	
	Invest in Crypto	Don't invest in Crypto	Horizontal Totals
0 Stocks over FD	17.80%	51.50%	69.30%
1 FD over stocks	2%	28.70%	31%
Vertical Totals	19.80%	80.20%	100% (approx)
		5.172 χ^2_{comp}	
		3.841 $\chi^2_{(1,0.05)}$	Attributes are dependent.

Figure 6 Test for independence of attributes.

From this table, it can be concluded that people with a preference for stocks have a clear preference for stocks.

● INDIVIDUALS' TRUST IN THE CENTRAL BANK - THE RBI

- 1) When asked about how much they believe in the monetary system of the RBI, the majority of the sample is concentrated towards a higher trust level. This has been demonstrated in the statistics of the question given in fig. 7

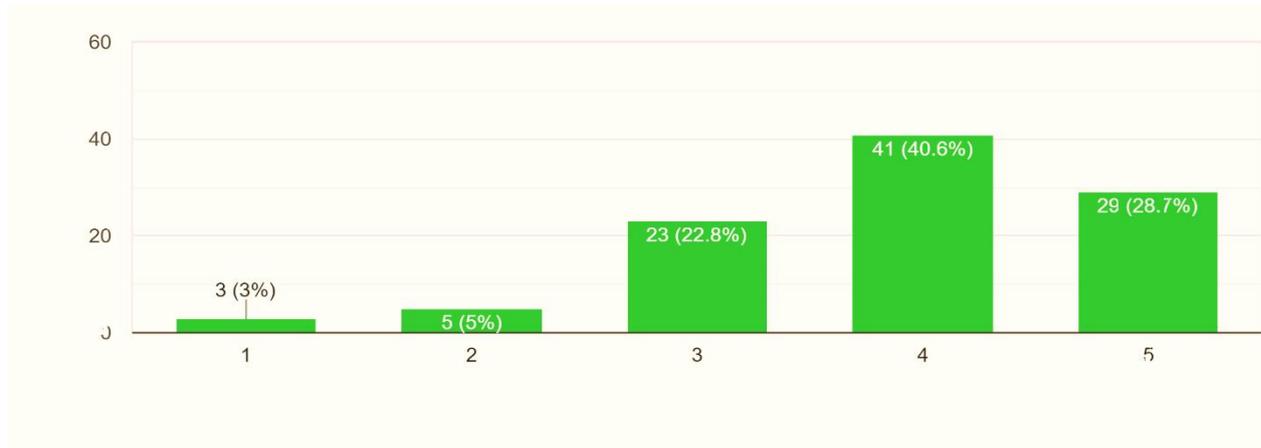


Figure 7 Trust in the monetary system of the RBI

On a Likert's Scale of 1-very less to 5-very much, the following trends are seen. The reason behind why this factor is so important is largely a trust in the RBI, which is the central banking authority of a country gives an idea about how much individuals would openly accept a currency based on such a technology which challenges centralised systems of banking.

- 2) Individuals' trust in the central bank is mainly influenced by their belief that it will protect them from rising prices and that protection against inflation is one of the most important determinants of trust (Fischer & Hahn, 2008)⁵. Mainly in a country like India, beliefs in larger institutions, like Governments and Central Banks are more prevalent is seen through the sample's data.
- 3) One can also attribute individuals' trust in the RBI is due to the fact that it is the central supplier of money. It supplies the rupee – the currency trusted by Indian citizens. The entire monetary system is being regulated by the RBI which means that the citizens are being looked after by the central bank and believe in its accountability.
- 4) Taking into consideration all the points above, it is needless to say that individuals are reluctant to abandon their belief in the RBI and its currency and move to a currency which is so volatile even as an asset.
- 5) When asked about how much they would trust cryptocurrency considering its volatility, the numbers strongly suggest a solid inference:

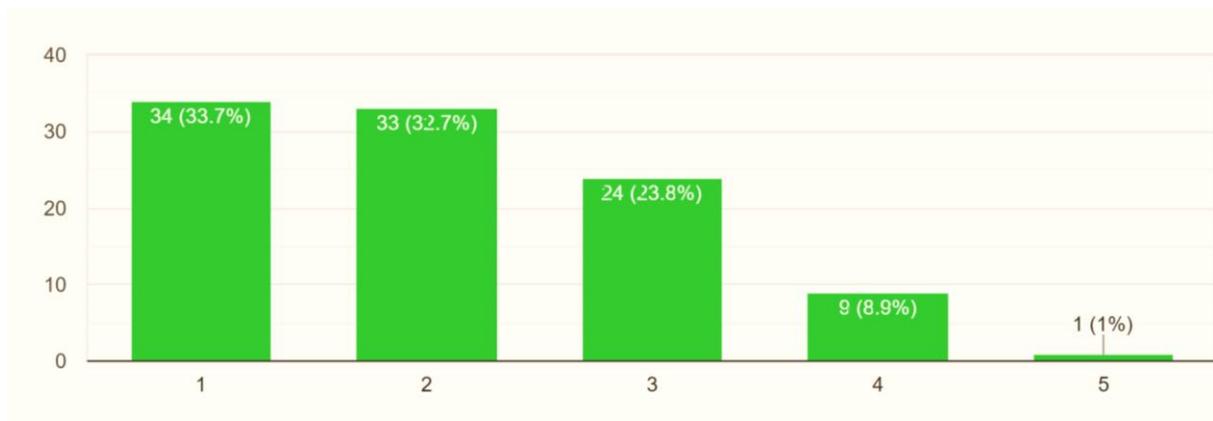


Figure 86 Trust in Cryptocurrency considering its volatility

Taking 1-very less to 5-very much, a larger chunk of the sample has chosen to opt out of volatility by saying that the volatility of cryptocurrency causes them to have less trust in it.

- 6) In addition to this, one of the responders, who does in fact invest in cryptocurrency justified that “It’s not only threat to RBI but also our Indian economy because if individuals stop investing in Indian share market and start putting their money in crypto which has no relation to any economy or any company is a threat to the Indian economic system. It is better to invest in the Indian stock market because we are investing in our nation only, not some coins without any background.” From this, it is evident that there is the fear of a bubble because of the anonymity factor associated with cryptocurrencies.
- 7) A few others expressed their distrust in the concept of cryptocurrency by saying that it undermines centralised control, that the government has no control over its value, that it would affect the authority of the RBI over the important functions associated with economic growth, budget planning and supporting the government, etc.
- 8) Those who showed trust in this currency justified it by saying that cryptocurrency is safer since individuals have autonomy over their own transactions. Mainly the belief that each and every transaction needs to be verified and consented, makes it a safer platform for its users was consistent with findings of Navamani (2021)⁶, and prevalent amongst respondents who showed somewhat a trust in cryptocurrency.
- 9) One of the opinions worth mentioning is that of a responder who said that this technology will be useful for RBI to track transactions in a better manner. This point will be taken up further in detail.
- 10) All in all, what one can conclude about individuals’ trust in RBI is that they strongly believe that RBI is an influential and rightfully important body for the monetary system in India.

- 11) When talking about Cryptocurrency, it is evident from the study that individuals prefer moderate risks in the stock market, but with the kind of volatility that Cryptocurrency sees, it cannot be trusted by common individuals.

FINDINGS BASED ON THE SECOND TIER:

II. The Second Tier:

The second tier consists of individuals divided into two categories:

1)The Experts on Cryptocurrency:

Consists of the experts in the cryptocurrency field who were interviewed are either working in or deeply studying or are in regular contact with cryptocurrency. The interviewees include blockchain developers, blockchain marketers and marketing strategists, smart contract developers, content and growth strategists, full stack developers, Crypto futurists, owners of Crypto start-ups, etc.

2) The experts in Academia and Finance:

The experts in this section include academicians, chartered accountants, financial consultants, researchers, etc. These individuals' opinions are answers to the questions which typically analyse the effects of these digital assets on the existing monetary systems.

Fitting the data collected from interviews into the study is done in the subsequent sections.

THE SPREAD OF CRYPTOCURRENCY USE

In 2021, approximately 20 million Indians joined the crypto bandwagon. Cryptocurrencies have even entered the vernacular of Indian investors. The current value of crypto assets held by Indians is \$5.3 billion. Despite the considerable risk associated with digital tokens, investors always seek out high returns.

The experts from the Second Tier, however, already seemed to have grasped this technology when it was nascent. "In his studies beginning from 2017, *HS, a blockchain marketer*, found out that the crypto market is like the internet and believed it would see a lot of success in the near future and therefore, he decided to be a part

The main point of difference between any traditional currency and a cryptocurrency is that, not anybody can simply start a currency and claim that individuals accept it and use it to transact. But if a person knows the know-hows of a blockchain, they can start a cryptocurrency of their own and with certain protocols, it can be traded on platforms. There are over 10,397 cryptocurrencies as of 2022 (Statista, 2022)⁷ and the number is still growing (Navamani, 2021)⁶ as demonstrated in Fig. 9.

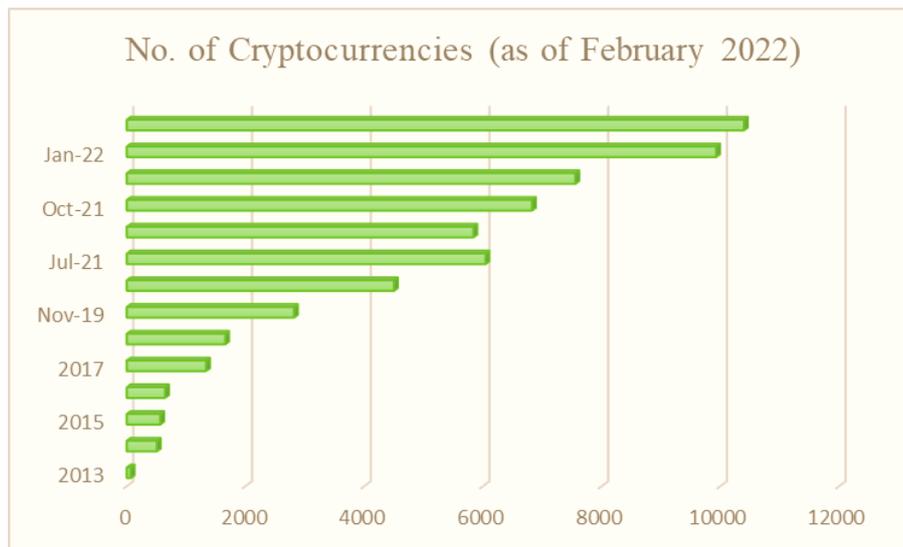


Figure 9 No. of Cryptocurrencies

Data Source: Statista⁷

The spread of Cryptocurrency has expanded rapidly since 2018 (Manahov, 2020)⁸ and is expanding further since 2020.

THE USE OF CRYPTOCURRENCY

Cryptocurrency might possibly “transform the monetary system as a whole” (Spithoven, 2019)⁹. Since Bitcoin does not need a middleman, it may emerge as a key means of processing electronic payments and reduce transaction costs for businesses. However, the same cannot be extended to other currencies considering anybody can create their own cryptocurrency with no particular verification of reliability. Yet it is found that cryptocurrency adds security to the transaction flow and regulates the formation of additional units of currency (Navamani, 2021)⁶.

Bitcoin has strong growth potential given these characteristics. Digital currencies, like regular currencies, can be subject to fraudulent and other illegal acts. However, the probabilities are less than the physical world. *(SM, founder of crypto based startup)*

THE CONFIDENCE WHILE USING CRYPTOCURRENCY:

In order for the value of a cryptocurrency to rise or fall, market players need to have faith in the currency itself, which means that a lack of confidence in the currency could lead to a sudden decline in value. Since no bank or organisation guarantees the value of cryptocurrencies, when one falls, they all fall. *(Said by US, an academician)*. The stakeholders in cryptocurrencies are the blockchain and smart contract developers, end-users of cryptocurrencies, along with the financial regulatory body of a country (Zekarias, 2022)¹³. However, lack of control, a particularly deliberate action by the central bank; a high tax rate from the Indian Government; the only stakeholders in cryptocurrencies left are then the developers and investors. On the one hand, the developers

possess the structural knowledge about blockchains, on the other hand are the end-users (the sample represents them in this study) who have neither the information of the working of this concept, neither the confidence that individuals gain when the central authority is involved in the working of an instrument – a clear implication for asymmetric information (Singer, 2022)¹⁴.

The public dialogue about cryptocurrency is quite polarised. The narratives surrounding cryptocurrencies are characterised by either deep mistrust or adoration that lacks an economic understanding. Both parties are unaware of its economical ramifications. The dramatic increase in advertising is exemplified by CoinSwitch Kuber's sponsorship of the cryptocurrency column on Gadgets360. Infrequently do supporters of cryptocurrencies and blockchain technology engage critically with the issues presented by the government and other stakeholders. *(stated by HP, works as a consultant for the a state government in India.)*

IS CRYPTOCURRENCY A BUBBLE?

According to the academicians, the reality that all cryptocurrencies are simply a bubble is a likely possibility considering the economics behind it does not add up. On the one hand, where the biggest economies have either shown a vague or a negatively inclined response with respect to the movement of cryptocurrencies in the asset market, it is mainly the investors that are the encouraging factors when it comes to a possible inflation in prices of cryptocurrencies. For many who have experienced the bursting of prior financial booms, the warning signs appear to be present. A constant surge over the years in the prices of Bitcoin serves as enough evidence to perceive a possible bubble, against which crypto experts suggest. (Green, 2022)²⁴.

A 2018 paper by Chaum and Laurini asserts that the sign of an asset for which a bubble can be foreseen will see that the market price for it will exceed the price that a rational agent would pay for it which is also its 'fundamental value'. The current price of bitcoin as of December 2022 was \$16,745²³ which accounts for only the Bitcoin. There are other currencies which have a relatively lower values however due to the barriers of reliability and frequent price fluctuations, our study suggests an aversion towards this asset.

The case for digital currencies progressively replacing old ones is compelling. The overview of the case for India's CBDC – the Digital rupee to be launched in the financial year 2022-23 is taken up in this study.

CRYPTOCURRENCY AND RBI'S CBDC

When the government introduced E-RUPI, it was regarded as an early form of digital currency. Finance minister Nirmala Sitharaman has stated on multiple occasions that the government is not opposed to cryptocurrencies and recognises their potential. In a talk for Vidhi Center for Law, RBI Governor Shantikanta Das stated that Central Bank Digital Currencies (CBDCs) are a more secure and feasible option for India. India is one of a number of nations that have signalled their determination to move forward with a CBDC. Numerous supporters of cryptocurrencies have proposed that private cryptocurrencies and CBDCs coexist, as the latter is not a perfect

counterpart of the former. Yet from this study, the interviewees – both crypto supporters and academicians who have opposite views on the implications of cryptocurrencies come to a consensus for the case of CBDCs.

The tussle between the government and capitalists has hampered the public's ability to view the broad cryptocurrency discussion objectively. Blockchain technology and digital currencies promise to increase financial inclusion by providing services to those who are excluded from traditional financial institutions.

The Indian government must develop a course that distinguishes it from nations that rely on cryptocurrency as a last resort or accept the crypto entrepreneurs' narratives. The lack of academic literature on cryptocurrencies is problematic and severely hinders policymakers' abilities.

CRYPTOCURRENCY & LEGISLATION IN INDIA

Finance Minister Nirmala Sitharaman effectively legitimised cryptocurrencies in India by classifying them as "digital assets" rather than cash and imposing a 30 percent tax on transaction earnings. Her declaration during the presentation of the Budget mainly eliminates ambiguity regarding the future of cryptocurrencies in India.

“There has been a phenomenal increase in transactions in virtual digital assets. The magnitude and frequency of these transactions have made it imperative to provide for a specific tax regime. Accordingly, for the taxation of virtual digital assets, I propose that any income from transfer of any virtual digital asset shall be taxed at the rate of 30 per cent,” the FM said in the Union Budget speech. She also revealed that the Reserve Bank of India (RBI) will launch its digital currency between 2022 and 2023.

The cryptocurrency experts, more or less inclined towards the producer side of cryptocurrency, believe that investing in cryptocurrency is an excellent way of building wealth in India. There have been instances where crypto-investors have made over 500 times of a trade which makes cryptocurrency extremely attractive. The 7% interest offered by time deposits seem dull in front of crypto returns. *(Particularly highlighted by SM, who has a cryptocurrency based start-up in Pune)*

The academic experts said that they are a bit worried about the political economy of crypto, since these issues need to be resolved through efficient coordination of monetary and fiscal policy. Concerns also exist, over the regulatory environment, which has to be tightened, particularly for cross-border transactions. Even holding crypto as an asset is so speculative and volatile at this time that it could threaten the asset ownership landscape and have a negative influence on the real economy. On the other hand, the very uncertain nature of cryptocurrency rather side-lined, in terms of privacy may present a chance for the creation of an entirely new method of designing regulation. *(Point made by HS, an advocate of crypto and DeFi)*

THE FUTURE OF CRYPTOCURRENCY

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Cryptocurrency has a bright future, with greater chances for positive development and progress in e-commerce and e-payments. Cryptocurrency will continue to evolve with the rapid growth of blockchain technology. As more individuals become more aware about the concept of cryptocurrency, more sellers should be willing to accept cryptocurrency payments subject to the legislation of the respective countries.

Until bitcoin is fully regulated and managed, consumers should utilise it with caution. Thus, the lack of legislation is the biggest worry in cryptocurrency. In India, the RBI's silence on Bitcoin regulation may backfire. Bitcoin dealers, exchanges, and merchants have sprung up in India. Bitcoins are currently widely accepted globally, therefore banning them in India is unlikely. Instead, it should be regulated. The sooner the better. *(IG, an academician)*

To combat criminals, protect traditional infrastructures, and protect consumers, the use of cryptocurrencies and the provision of services based on cryptocurrencies should be regulated and monitored. In order to protect the financial system, regulation and monitoring are also desired. Specifically, cryptocurrency poses a threat to the conventional banking system (Spithoven, 2019)⁹

The Reserve Bank of India (RBI) is not yet fully persuaded by the concept of cryptocurrencies. It has previously advocated for a total ban on cryptocurrency. Even during the meeting, the Central bank remained sceptical of the data supplied by the crypto-exchange platforms and stated that additional factors must be considered. A few days before the meeting, the governor of the Reserve Bank of India (RBI), Shaktikanta Das, stated that cryptocurrencies pose a grave threat to any financial system since they are unregulated by central banks. *(Point made by MV, a CA)*

BRINGING TOGETHER THE TWO TIERS:

The cryptocurrency experts who are proponents of the currency have numerous reasons to support it. The main reason is the belief in the level of security. One of the experts interviewed said that decentralisation is a strong reason that made them support this technology. The fact that transactions could be carried out without middlemen, and in fact, more efficiently, makes it all the more attractive. "Like if you have something like blockchain, it empowers individuals to transact peer to peer, right? It's just like two individuals need to have a crypto wallet. Okay. And some currency, it can be Bitcoin or anything." For them, security and peer to peer transactions is the most attractive feature when it comes to Cryptocurrency.

What can thus be understood is that, it is what the blockchain technology has to offer to the financial systems which makes it safer and more efficient than traditional systems.

One of the interviewees also mentioned that it is the financial freedom which is important when it comes to transacting in Bitcoin or a blockchain based currency for that matter.

HS, one of the interviewees calls this technology a "double-edged sword" because the transactions done with the help of Blockchain based cryptocurrency are relatively more secure as there is no one looking over them. The transactions are "peer-to-peer." However, when it comes

to malicious, terrorist activities, the same technology can track transactions because it is a public database or a public ledger. Therefore, such suspicious transactions can safely be tracked back because the transaction data is stored safely in blocks.

An important point mentioned by most pro-crypto experts is that the cryptocurrency Bitcoin is anti-inflationary in nature. Where central banks need to hike their interest rates in order to control inflation, cryptocurrencies can simply do this by making structural changes in the code (Félez-Viñas et al., 2021)¹⁵. The finite supply of Bitcoin means that there are only 21 million of them. But here is the catch, if the truest reflection of individuals' demand for a currency could only be tweaked by making changes in a code, would it really be an accurate representation of reality? When it comes to increasing interest rates, which implies tightening the liquidity in the economy thereby reducing the demand for commodities and money, the central bank ensures that individuals contemplate the importance of saving, and even more so it is an organic representation of individuals' general demand trend at a given period of time.

Given the volatility of Cryptocurrencies (Nextadvisor, 2022)¹⁶, one could have bought a loaf of bread for an arbitrary X. amount of a crypto coin, but how can one ensure that the price of the bread would be the same the day after. It could be tweaked with a code, with a structural change in the code, but how would that give individuals a true idea of what is going on around them when it comes to daily commodities and their prices. The central bank's way of controlling inflation is by bringing about a reduction in the demand of individuals and reflects the genuineness of individuals' economic and financial decisions.

When it comes to considering the opinions of the end-users, from the survey, it is seen that individuals do not trust the concept of cryptocurrency. More or less during the pandemic of 2020, more individuals came across the phenomenon, invested in the coins- a kind of behaviour showing herding tendencies (Manahov, 2019)⁸ and ended up losing money due to the volatile movements of the cryptocurrencies. Cryptocurrency has seen such spiking value changes within no time that it makes individuals feel endangered about their decisions to invest there. Cryptocurrency has a high risk-high return ratio having a standard deviation rate that can reach more than 100% (Andrianto & Diputra, 2018)⁴. This digital market is still new, the lack of understanding of crypto trading, the abnormal economics properties of cryptocurrencies and the limited academic research (Manahov, 2019)⁸ are causing barriers to the consumers. But, the only way individuals will be able to make the best use of this technology is by gaining the knowledge required to understand it. But this does not eliminate its extreme volatility. If crypto-currency is to become a popular collateral asset, the volatility of the crypto market will play a pivotal role (Masilela, Wyk & Marwa, 2021)¹⁰. The movements in Cryptocurrency are mainly due to speculation amongst others. "For Bitcoin to become more than a curiosity and establish itself as a bona fide currency, its daily value will need to become more stable so that it can reliably serve as a store of value and as a unit of account in commercial markets" (Yermack, 2013)¹¹. When one invests in something of a speculative nature, it is natural for them to have high risk on their portfolio. These assets like cryptocurrency are extremely volatile and due to a convenient denomination pattern, transactions are very easy to go

through- summed up by one of the responders of the survey who said that Cryptocurrency encourages uncontrolled money.

The stock markets, too, are volatile. But the magnitude of volatility is much lesser because there are certain rules and regulations laid down by the SEBI (Security and Exchange Board of India) which allow organisations listed and individuals investing in them to have a mutual trust.

Pooling in the information gathered from the end-consumers of the First Tier and the experts of the Second Tier, one finds that there is a significant gap in beliefs, mainly in the kind of information the two parties hold. It is thus, very obvious that the common individuals lack the information, or there exists an informational asymmetry between the two which is causing losses to one party due to the fluctuations in the crypto market.

IMPLICATIONS FOR THE RESERVE BANK OF INDIA

Regulation, as always. The cryptocurrencies which seem like a perceived threat to the RBI can never be a legal tender in India as said by T.V. Somanathan, the Finance Secretary of India. The cryptocurrencies are only a danger due to their instability and if introduced as legal tender, they will potentially threaten the anchor of any economy, inflation. "If crypto is introduced as a currency - in the sense as a medium of exchange -as an alternative to or complementary to the existing currency, unless it is pegged and regulated, monitoring & controlling the monetary system, interest rates and inflation would become difficult.", said one of the responders who is also an expert in the field of Economics. Any currency that is used as a medium of exchange, must gain the trust of its users and this will be almost difficult with the kind of fluctuations cryptocurrencies see. As said by one of the interviewees, MS, a Crypto amateur and an economics student, "Cryptocurrencies are not a threat to the existence of RBI, but to the macroeconomic variables considering different market conditions: the monetary policies holding the power to control inflation in the different periods of a business cycle come into danger threatening the economy."

Regulation from the RBI would mean that individuals' trust is being extended to a market which is being looked over and is also of use to the individuals. The Government of India along with the RBI must make information and general awareness about cryptocurrency available to the public (Javed, et. al, 2019)¹². Although the organisations that power peer-to-peer networks may ensure improvements in incentives and governance, external regulation and oversight are necessary. Cryptocurrencies may begin to show traits of Veblenian (predatory) markets if there is no substantial external regulation (Spithoven, 2019)⁹.

(One of the chartered accountants, MS, made a point by saying that any kind of unregulated currency will be a threat to the central bank if not kept under the purview of laws. If not regulated, it will work as a parallel market and pose some threat.

Bitcoin in particular and cryptocurrencies in general are aloof from the banking and payment systems which make them seem more vulnerable to fraud and other threats mainly because they are not being overlooked by the centralised systems like other currencies and assets are.

As rightly mentioned by Spithoven (2019)⁹, "It will take a long time before blockchain is going to fundamentally influence society and economy." It is important that Cryptocurrency be regulated and accepted early on, even as an investment tool because every kind of investor must find themselves investing in the crypto market and that will be possible only if the asset is able to gain the trust of different types of investors and not only the aggressive, risk-taking investors. This will in fact enable it to reach more individuals and widen its base and deepen its roots into the economy with a more concrete structure. The presence of a regulating authority will not only look after the market but will also act as a middleman, facilitating the transaction mechanism. (Javed et. al)¹².

Thus, regulation and stability will make crypto a more widely accepted and used phenomenon in the Indian market vis-a-vis the trust that individuals of India have in the RBI.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSION:

1. Instead of a banking system where every transaction is always controlled by a bank, cryptocurrency is there as an eraser of all third parties and allows freedom of ownership of personal data without having to think about a third party.

Thus, the study's findings are: Cryptocurrency is a virtual money with no physical value. Using blockchain technology can improve user data security. Cryptocurrency's worth is unknown as it is decentralised. Cryptocurrency data is permanently saved in the blockchain network, preventing any kind of manipulation.

2. To increase the revenue of businesses', cryptocurrency offers a novel, effective, and appealing payment method. It also provides an alternate payment mechanism to actual money, allowing users to quickly buy, sell, transfer, and exchange funds. Cryptocurrency platforms have come up to allow individuals to trade these assets, nevertheless, they are not governed and regulated. Freedom of transactions in spite of a high tax, may still put the financial system of a country at danger. Legislation is the major problem with cryptocurrency systems.

3. Our study and analysis of current bitcoin literature gave us a good idea of the scale of cryptocurrency use. The results of the survey provided us a preliminary view about the use, growth, trust, and future expectations of cryptocurrencies. It appears that bitcoin (other cryptocurrencies) will be the next currency platform due to its high volume, rapid growth in popularity, and the options it provides.

4. Aside from the survey results, the confidence and trust in using cryptocurrency is considerably low as shown in various situations in this study. But users are unaware of the true potential of cryptocurrency. Many cryptocurrency forms still do not warrant such faith. Until Bitcoin is fully regulated and managed, consumers should utilise it with caution.

5. The future of Cryptocurrency is bright, with additional chances to improve e-Commerce and e-Payment. Cryptocurrency will continue to evolve with the rapid advancement of technology.

Cryptocurrencies are more subject to evolution and will withhold this expectation considering its digital architecture.

.Many studies are required to provide scientific content in the Cryptocurrency industry. We need to look into the relationship between actual financial laws and the legal position of establishing cryptocurrency platforms. Also, the level of adoption and acceptance requires additional thought and study with huge samples. Using and trading Cryptocurrency requires a high level of trust and confidence. Further research can focus on building use-cases for cryptocurrencies in various Indian sectors.

7. In order for cryptocurrency to be used widely, it must be able to win the trust of the users. The very proven gap in the information between users and providers must be erased and the vagueness that individuals experience with respect to this currency must be mitigated so that individuals get a better understanding of where they are investing and are able to enjoy fair returns based on their decisions.

8. The study concludes also that the Reserve Bank Of India must adapt to this newly emerging technology and thus, continue venturing into its initiative of a blockchain based digital rupee which will help it to efficiently track transactions, provide a high security level and a regulated stability so as to create a platform where individuals can make most out of a brilliant technology like blockchain.

RECOMMENDATIONS:

1. From the analysis of the survey and the interviews, it has thus been concluded that the usage of cryptocurrency will be far reaching only and only if it is regulated by the RBI and thus ensures that there is not an enormous risk attached.
2. The RBI must introduce a CBDC or a central bank digital currency. This being done under the name of "Digital Rupee", was announced in the budget of the financial year 2022-23 by the finance minister of India and this CBDC is to be released tentatively by the beginning of 2023.
3. The RBI's entering a new technology platform will allow individuals to understand it better because of individuals' level of high trust in the RBI since decentralization has the total potential of undermining the effectiveness of traditional financial regulation and enforcement (Zetsche, Arner & Buckley)¹⁷ In addition to this, RBI has far reach and authority when it comes to adopting new technology. With the help of the Digital Rupee, individuals will have access to a new piece of technology and will be more educated vis-a-vis the use of it. It must hence take the initiative of advertising and creating awareness amongst the commoners.
4. The introduction of a CBDC will also allow the RBI to understand blockchain technology better so that it can venture into a space which will help it to move closer to a digital economy. The RBI, as it is, must accept this revolutionary technology and put it to help its functioning better.
5. Knowledge spill overs from the usage and experience of Digital Rupee will help individuals to not only accept cryptocurrencies with a more open mind but to also make more calculated

and secured decisions. Since externalities of knowledge are diffuse, if the government takes active initiatives in this vertical, citizens will be more encouraged to gradually accept this concept.

6. Once the technology has been better understood, by the systems and the individuals, the RBI may reduce the tax rates on virtual digital assets and re-evaluate regularly for the next few years in order to allow individuals to have an open and more broadened access to an affordable investment tool.
7. The RBI, as the central banking authority, must put in place a committee or a regulatory body to regulate the movements of the crypto market so that more individuals can start investing in cryptocurrency at the same time ensuring that common individuals get more investment opportunities without losing excessive money due to the same.

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