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A STUDY ON INDIVIDUAL'S PERCEPTION TOWARDS BLOCKCHAIN TECHNOLOGY IN FINANCIAL SERVICES

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ABSTRACT

In the modern era where technology is constantly evolving with each passing day and diversifying to meet the demands of various sectors, Fintech also known as financial technology is bringing about a revolution in the financial sector and challenging the way traditional methods and transactions take place. To get the transactions and other services settled effectively and securely, Blockchain Technology comes in the picture. It is a leading decentralised technology and one of the emerging trends in fintech. Blockchain technology is the backbone of cryptocurrency. It has the potential to restructure the current ways and transform the financial services to a more better version. Blockchain technology eliminates the counterparty risk , is immutable, secure, reduces time and costs. As a result, the current research aims at studying its current role in financial services in India and also importantly knowing the awareness levels and perception of the general public towards Blockchain technology in financial services. The current research takes into consideration "Exploratory Research Design" which is supported by the primary and secondary data collection methods. Around 120 respondents across different age groups were considered as the sample size. A structured questionnaire was designed and administered to the respondents utilising convenience sampling method. It was concluded that more than half of the respondents were aware about the blockchain technology and a majority of respondents were positive that blockchain technology can bring a good change if used in financial services sector. It was found that respondents are concerned about factors like privacy concerns and technical complexity aspects of the technology. Many respondents also had the perception that education and awareness regarding the technology is an important factor to be considered while its adoption in the sector.

***KEYWORDS**: Blockchain Technology, Fintech, Counterparty Risk, Immutable.*

Introduction

The Blockchain technology dates back to the year 1991, when two research scientists named Stuart Haber and W. Scott Stornetta introduced it for the first time. This technology later evolved through the course of time, when in 2008, it was first conceptualized by Satoshi Nakamoto (anonymous founder) who developed the well known Bitcoin as the first cryptocurrency and used this technology as its base to operate on. Blockchain technology is a digital platform where the data related to transactions, business assets or any information records is stored in the forms of a block which form a chain like structure hence the name given. Blockchain technology is a decentralised database which uses distributed ledger technology. The distributed ledger technology makes the blockchain transparent as the data can be viewed by all the computers involved in the network also known as nodes in this context. Also the data in this technology cannot be altered or manipulated as it is permanently stored once the transaction process is completed which makes it immutable. It also is the most secure digital platform as its not prone to third

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party intervention in any way and also is encrypted as each block in the chain are cryptographically linked with each other and uses a hash function which adds an extra layer of security to the data stored. A blockchain hash is like a unique identity given to each block and it also contains the hash of previous block due to which the blocks are linked in the form of chain. This technology makes the transaction process much easier with quick and secured settlements and also has a feature of self executing contracts. The blockchain technology works on consensus and various other algorithms for the transaction process. At present, there are advancements and further scope for this technology to improve, stating its current use in variety of sectors. In India, taking the financial sector into consideration there are many banks trying to integrate blockchain technology with their operation activities to benefit from its exceptional features. The RBI is taking keen interest around how this technology can improve the financial services. The IDRBT (technology research arm of RBI) conducted a workshop regarding its usage in the Indian Financial and Banking sector. The business named IBBIC which will help to foster this technology in the financial services has many well known banks as its stake holders.

Objectives

- To analyse the current role of blockchain technology used in Financial services in India.
- To study the perception and awareness levels of the general public on blockchain technology and its usage in financial services.
- To compare the levels of awareness of the general public on the basis of gender.

Need and Scope of the Study

As the world advances forward with variety of technological advances, the need to have secure ways to settle transactions with greater efficiency is a much needed requirement in financial services where millions of transactions take place every minute. The Blockchain technology has such several good advantages which can be used in financial services to record and settle transactions, validating them and reducing counterparty risk. As the technology is also evolving and there are considerations made for it to be used in financial services to use its benefits in developing this sector. This study is needed to know its current role in the sector and public' s perception towards this technology being used in financial sector is very essential.

This study is not going to explore the blockchain technology much in depth or dwell more in complicated technical aspects. It mainly focuses on knowing about its current role and studying the individual' s perception towards its usage in the financial services. The study will be useful to know the various awareness levels and perceptions of the public and also to know the possibilities of this technology to be considered in the financial services in India.

Research Methodology

The current research uses "Exploratory Research Design". The study uses Primary data collection method as a major resource and also uses secondary data for supporting the research. As a part of the primary data collection, a structured questionnaire was designed and administered to the general public across various age groups utilizing convenience sampling method. A sample size of 120 respondents was considered.

The collected data is analysed using simple calculations and presented with the help of statistical tools like pie charts and percentages.

Review of Literature

Rashikala Weerawarna, Shah J. Miah & Xuefeng Shao (2023): This study's main objective was to explore more ways on how blockchain technology could bring about a change in finance sector through reviewing 50 most relevant articles and professional industry reports from 2008-2022 to identify several features of blockchain research in finance sector. The study also highlighted on various dimensions of this technology, current status in finance and various challenges in implementing this technology at initial stage. In conclusion of their findings they have found three important areas that require research attention for this blockchain technology to dominate the sector.

Rachel W. Robinson (2018): This study aims at exploring the ways blockchain technology could enable the corporative models for organizing capital and capability, exchanging value, and managing risk peer to peer. It also talks about the ways through which the potential of blockchain technology can be harnessed to change the financial sector from its current situation to a more advanced level. Also discusses about the topics of financial inclusion and exclusions, its causes etc.

This study also used relevant case studies to support its main ideology. Concluding the research it states about the obstacles of fully implementing the blockchain technology and also possible recommendations for the same.

Soumak Chatterjee, Louisa Bai, Vikas Singla, Kshitish Balhotra, Neha Bhasin, Cara Engelbrecht (2019): This study outlines on how blockchain can improve the future state of global trade if its fully embraced and leveraged. It also mentions the benefits of using blockchain technology especially in few organizations like insurance providers etc. This study also explains about how blockchain technology is used in various sectors, its considerations, needs and challenges. The paper also talks about current shifts in the technology, there are case studies laid out to support more on this topic. The main highlight of this research is the unexplored path of this technology and also tells further about incorporating it in the business organisations by considering business and technical challenges.

Victor Chang, Patricia Baudier, Hui Zhang, Qianwen Xu, Jingqi Zhang, and Mitra Arami (2020): This study describes the impact and development of blockchain technology in financial sector. They also present three critical challenges and three ethical issues regarding this technology. Further they also tell the major reason behind Banks using blockchain and the troubles they face. For this study, qualitative method was adopted and sixteen experts were interviewed which stated knowledge hiding in blockchain is the common factor which was further analysed using TPB (Theory of Planned Behaviour) approach. Concluding the study, they talked about recommendations and techniques on how to effectively understand and use the Blockchain technology for its adoption. The study developed four propositions regarding this technology. In addition, they also mentioned about more structured way of knowledge sharing for betterment in financial sector.

Data Analysis and Interpretations

Objective 1: To analyse the current role of blockchain technology used in financial services in India.

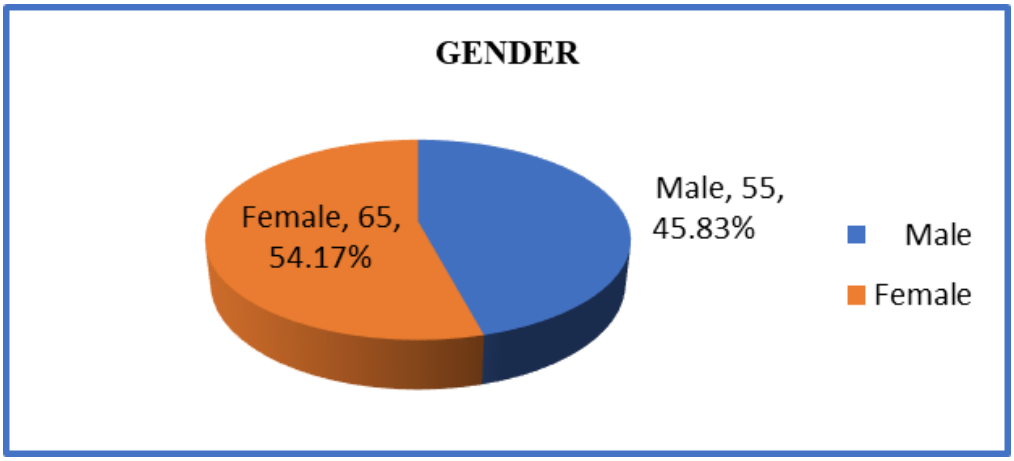
The current role of blockchain technology used in financial services in India is in its initial stages. The technology is not fully adopted in the sector and is yet to be explored to harness its potential and enhance the financial services with its positive benefits. In India, the cryptocurrency is not supported. The Government of India and RBI has also warned against the risks of dealing with cryptocurrency, hence it is not authorised to indulge in and even if one does, they would have to bear the risks alone. But they found the blockchain technology to be useful and wanted to explore it further ahead to see if it can also help in the various sectors. In financial sector, the blockchain' s benefits like digital legder technology, smart contacts, secure and efficient settlements of transactions can be used to increase the potential of current operations of banking and financial services. The cross border payments, remittance system, letter of credit (LCs), inter-bank settlements and other transactions which if integrated with blockchain platform can be upgraded to settle more efficiently and with less time taken. One of the special functions of blockchain is that there is no involvement of third party, it's a peer to peer connected network where transactions directly take place between the two parties which makes it secure and once the transaction is completed it is permanent and can't be altered. Blockchain technology reduces the risk of fraud as the transactions made are authentic. The cryptography principles or the algorithms on which blockchain technology works is what makes it unique and gives immense benefits, hence integrating such functionalities with Indian financial services could prove to be worthy and useful with thorough research and tests.

In India, the Government and RBI (Reserve Bank of India) has started efforts have innovations and use such technology for its potential benefits through its schemes one such scheme was the Regulatory Sandbox Scheme (August, 2019) where RBI released a detailed framework which will aid the fintech startups to test their hypothesis before its officially launched in market. It opened applications for innovative financial technologies including smart contacts, blockchain technology, etc. Also in January 2019, the IDRBT (Institute for Development and Research in Banking Technology) established in 1996 by RBI published a blueprint regarding the roadmap to blockchain implementation in several areas and for it to be used by financial institutions. They also suggested a built-in mechanism for regulatory supervision of the blockchain system which can help in mass adoption of the technology. It was also mentioned in the Finance minister's speech in parliament budget session 2018-2019 that blockchain technology will be explored more actively for rise in digital economy as the transactions are done without the need of intermediaries.

Furthermore, many banks did experiment on adopting blockchain based solutions in services. Examples are Yes Bank facilitating the issue of commercial papers (CP) of worth INR 100 crores using blockchain technology for Vedanta Limited, the transaction of which was completed in partnership with MonetaGo (leading fintech provider) based in New York, USA (2019). Another example also included Axis Bank launching international payments services using Ripple' s enterprise blockchain technology solution (2017). The SBI(State Bank of India) also tied up with JP Morgan to use its blockchain technology to speed up overseas transactions. A consortium of 11 banks like HDFC Bank, ICICI Bank, Axis Bank and many other banks have come together to launch India' first ever blockchain linked funding initiative for MSME's. Finally concluding with IBBIC (Indian Banks' Digital Infrastructure Company) which was initially a consortium of 11 private banks and 4 public sector banks, now a total of 18 banks are a part of it whose goals are at providing a framework for the process of adopting blockchain solutions for the financial services in India and is currently working on Letter of Credit (LC) issuance using this technology. This is the overview of major milestones which took place in using blockchain technology in financial services in India.

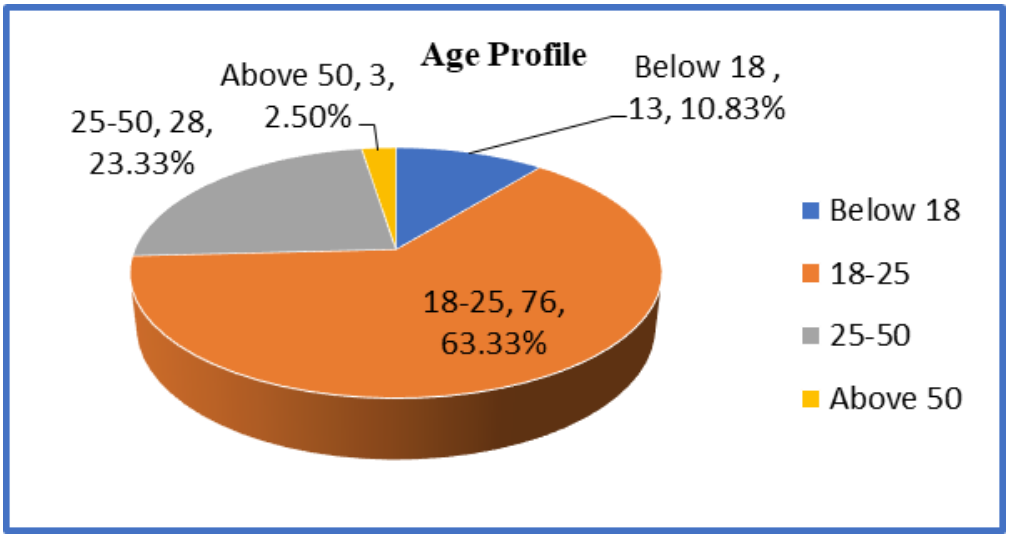
Demographic Details of the Respondents

- **Gender**



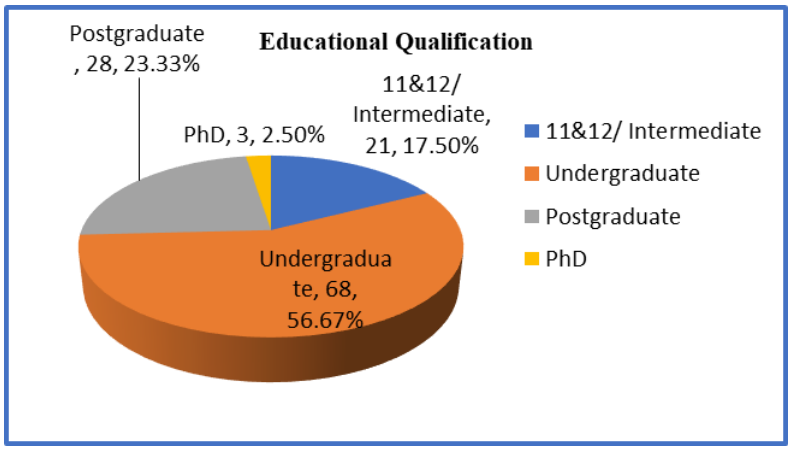
Source: Primary Data

- **Age**



Source: Primary Data

- **Educational Qualification**



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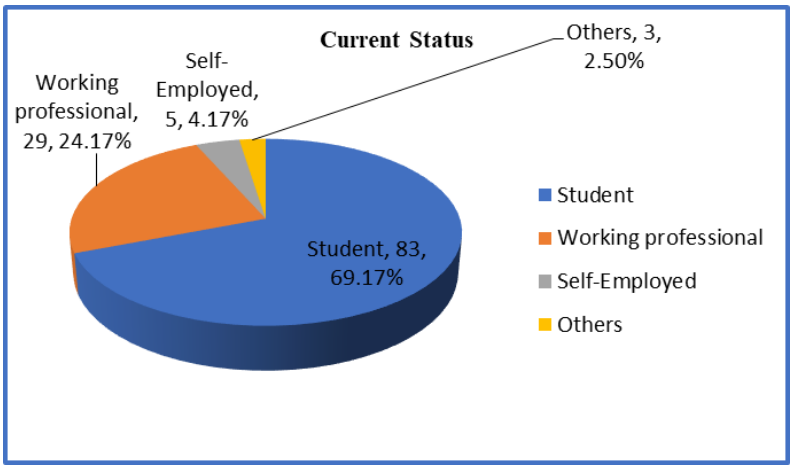
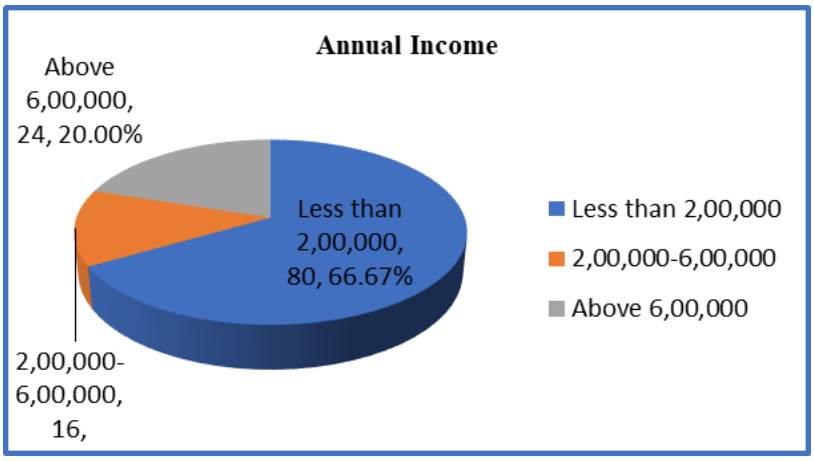
- **Current Status**



Source: Primary Data

- **Annual Income**



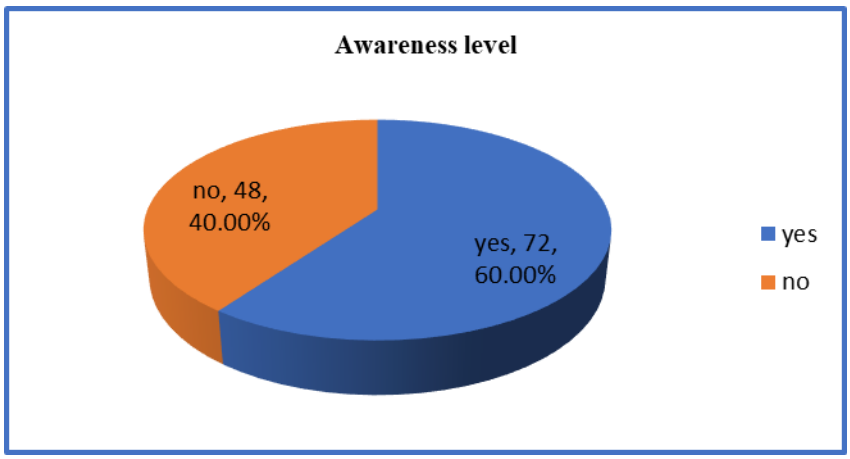
Source: Primary Data

Interpretation

From the above data it is observed that the majority of respondents are females (54.17%) and the most common age group of respondents who answered are from the age group of 18-25 (63.33%). It is also observed that greater number of respondents 's educational qualification is undergraduate (56.67%), the current status is student (69.17%) with many of them having annual income of less than 2,00,000 (66.67%).

Objective 2: To study the perception and awareness levels of the general public on blockchain technology and its usage in financial services.

- **Have you heard about the term "Blockchain Technology" ?**



Source: Primary Data

Interpretation

From the above data it is understood that 60% of the respondents were aware about the term blockchain technology and the rest 40% of the respondents were not aware of the term as shown in the above figure.

Question	Option: Yes	Option: No	Option: Maybe
Is Blockchain technology complicated to understand?	27.78%	33.33%	38.89%
Have you used Blockchain technology related platforms before?	26.39%	58.33%	15.28%
Do you think Blockchain technology will make financial transactions more secure and easier?	72.22%	2.78%	25%
Do you trust the Blockchain technology, for it to be used in the financial services?	63.89%	8.33%	27.78%
If Blockchain technology is used, will it reduce transaction costs and timing to settle the transactions?	59.72%	6.94%	33.33%
Have you heard about the applications of Blockchain technology in the financial services?	54.17%	31.94%	13.89%
Would you be interested in using Blockchain technology related applications in financial services?	65.28%	9.72%	25%
Do you Believe Blockchain technology will bring more transparency in financial services?	63.89%	11.11%	25%

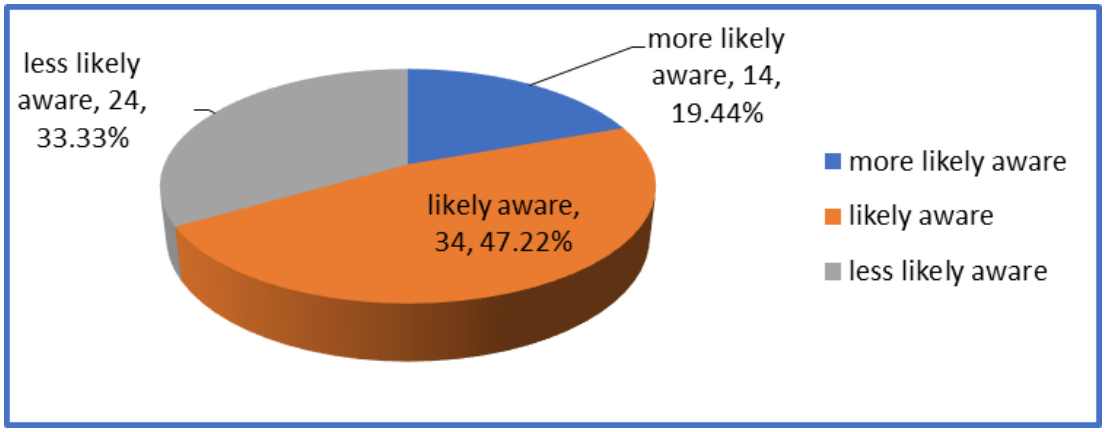
Source: Primary Data

Interpretation

Majority of respondents (38.89%) were doubtful regarding understanding the blockchain technology and when it comes to using blockchain related platforms, 58.33% of the respondents have never used such platforms before. More than half of the respondents (72.22%) believed that blockchain

technology will make financial transactions more secure and easier. 63.89% of respondents trust that the blockchain technology can be used in the financial services. 59.72% of the respondents believed that blockchain technology can reduce transactions costs and timing to settle the transactions. 54.17% of the respondents have heard about the applications of blockchain technology in the financial services. It is also found that 65.28% of respondents are interested in using blockchain technology related applications in financial services. 63.89% of respondents also believe that blockchain technology will bring more transparency in financial services.

- **How much are you aware about Blockchain technology?**

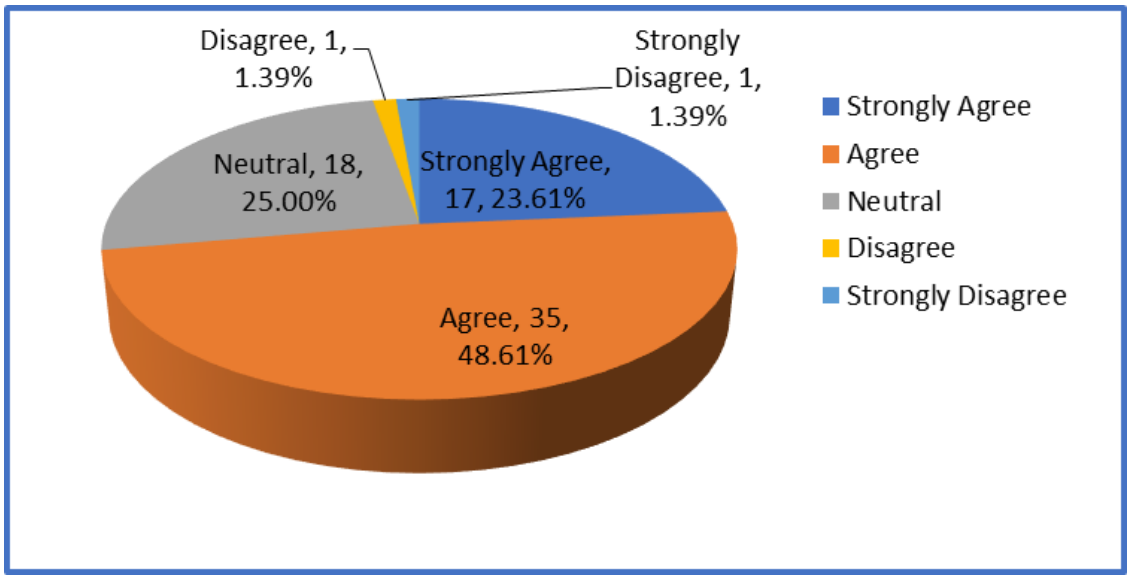


Source: Primary Data

Interpretation

From the above data, it is understood that majority (47.22%) of respondents are likely aware about the blockchain technology.

- **Will Blockchain Technology bring Good Impact on Financial Services?**

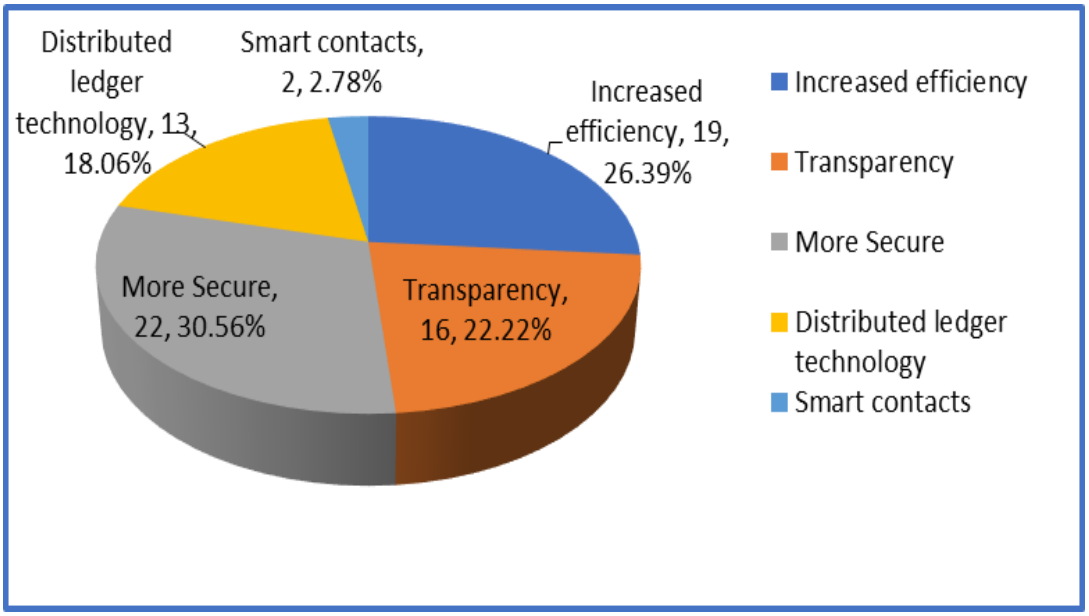


Source: Primary Data

Interpretation

It can be indicated from the above data that 48.61% of the respondents agree that blockchain technology can bring good impact on financial services.

- **What do you think is the best feature of Blockchain technology which can enhance financial services?**

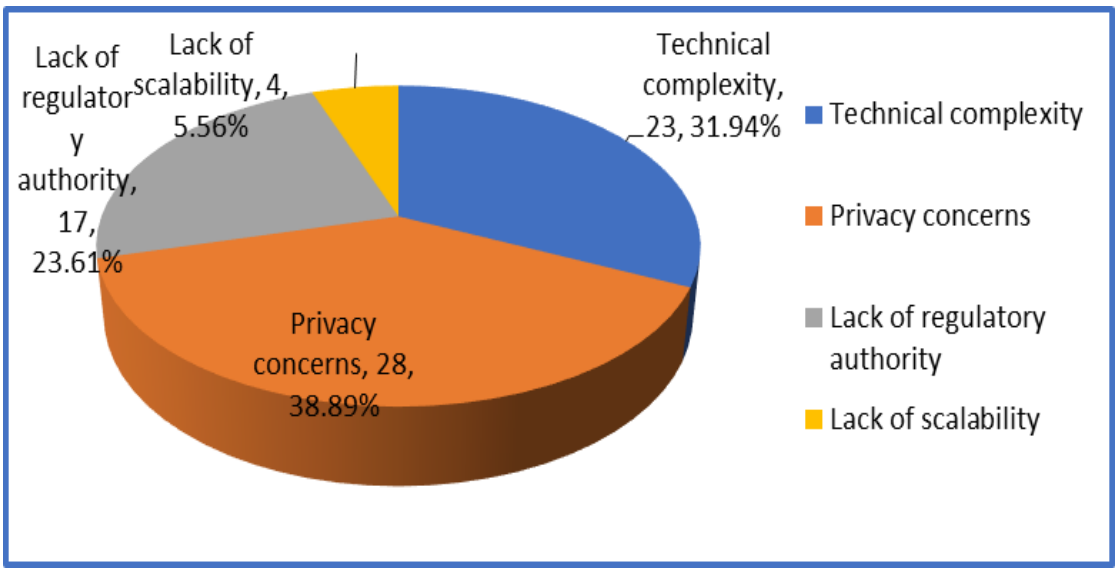


Source: Primary Data

Interpretation

From the above data it can be indicated that 30.56% of the respondents have chosen more secure as the best feature of blockchain technology which will enhance the financial services.

- **If Blockchain technology is regularized in the financial services, what will concern you the most ?**

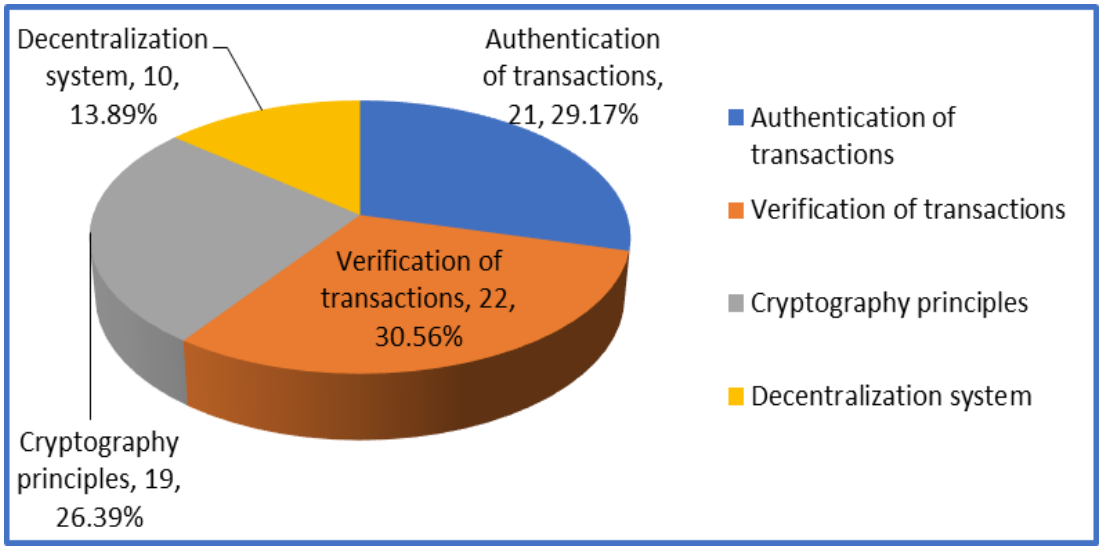


Source: Primary Data

Interpretation

From the above data it is inferred that 38.89% of the respondents will have privacy concerns if blockchain technology is regularized in the financial services and close to the majority.

- **How do you think the application of Blockchain technology in financial services will bring more security?**

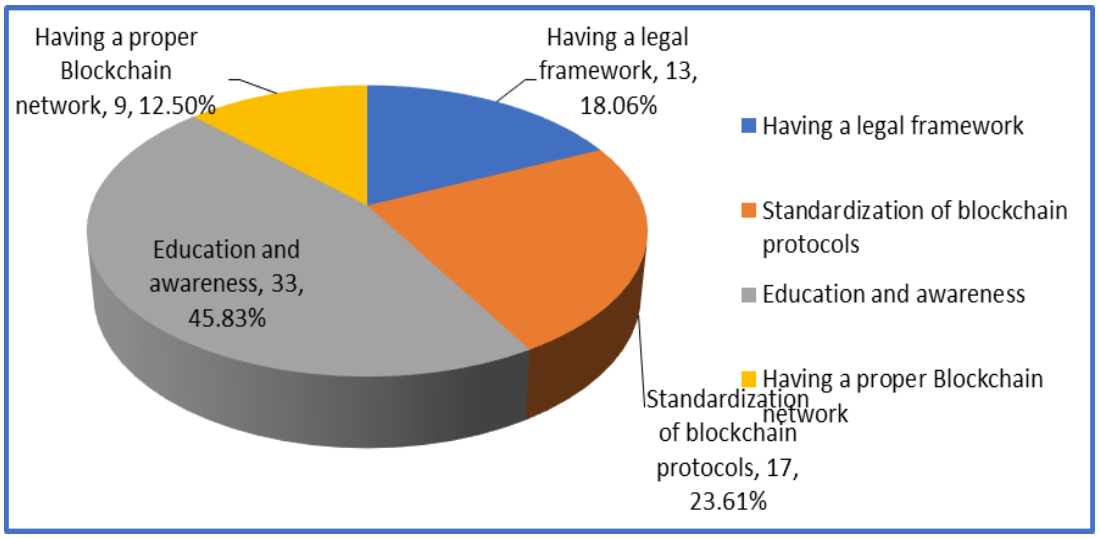


Source: Primary Data

Interpretation

From the above data, it is observed that 30.56% of the respondents chose verification of transactions as the application of blockchain technology in financial services which will bring more security.

- **What is the most important factor that should be considered during adoption of Blockchain in financial services?**

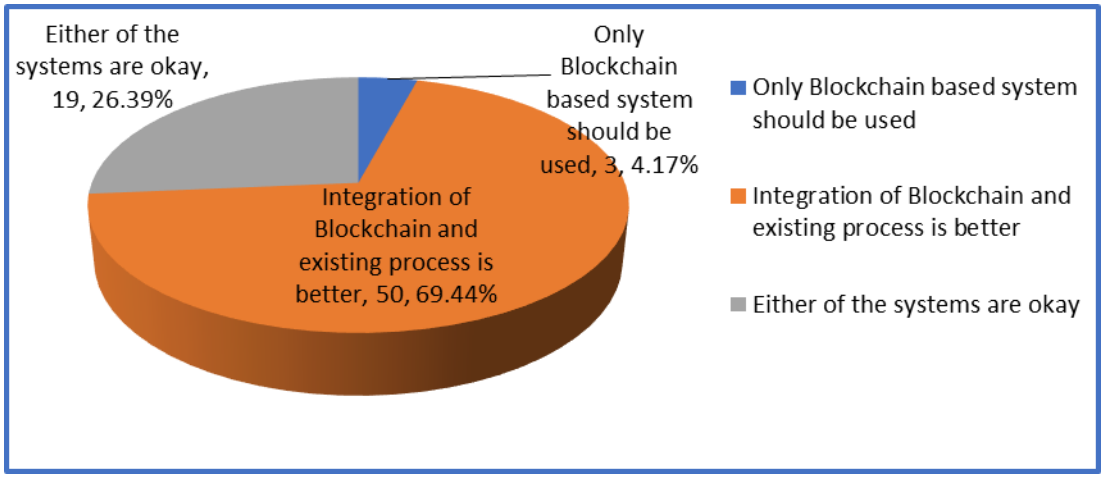


Source: Primary Data

Interpretation

From the above data, it is observed that majority of the respondents (45.83%) selected education and awareness as the most important factor that should be considered during adoption of blockchain in financial services.

- **Will you prefer only Blockchain based financial services or integration with the existing process of financial services ?**



Source: Primary Data

Interpretation

From the above data, it is inferred that majority of the respondents (69.44%) opted for integration of blockchain and existing process is better.

Objective 3: To compare the levels of awareness of the general public on the basis of gender.

Gender	Total (Frequency)	Percentage	Have you heard about the term "Blockchain Technology"?			
			Option: Yes (Frequency)	Percentage	Option: No (Frequency)	Percentage
Male	55	45.83%	37	67.27%	18	32.72%
Female	65	54.17%	35	53.84%	30	46.15%

Source: Primary Data

Interpretation

Out of 120 respondents, majority respondents were females (54.17%) and their awareness levels about the term blockchain technology are found to be 53.84% while the rest 45.83% of respondents were males and their awareness levels regarding the term blockchain technology are found to be 67.27% which is comparatively higher as compared to female respondents 's awareness levels.

Findings

- **Objective 1**: It was found that the current role of blockchain technology in India is in infancy stages. The Government of India and the RBI has also taken keen interest in exploring the technology and for it to be used in the financial services. There are many banks who also took up various projects for the usage of the technology, yet this technology is still being experimented and explored furthermore to evaluate its benefits and apply it in the financial services operations while also considering the risks and outcomes of it.
- **Objective 2**: The study found that majority of the respondents were aware of blockchain technology and also regarding its usage in the financial services. The respondents also positively perceive and trust that blockchain can bring a good impact on the sector while also considering its benefits and applications. It was also found that there were concerns shown by the respondents if the technology is to be regularized like privacy concerns and technical complexity etc and 69.44% of the respondents perceive that it is better to have integration of blockchain technology and existing processes of the financial services.
- **Objective 3**: It is found that majority of the respondents were found to be females (54.17%) but the awareness levels of male respondents was found to be higher(67.27%) as compared to female respondents whose awareness levels were slightly lower(53.84%).

Conclusion

From the study, it can be concluded that majority of the respondents are aware about blockchain technology and also about its applications in the financial services. The study further concludes that even though majority respondents were females, the awareness levels was found higher in male respondents. There was positive response among many respondents that blockchain technology can bring a good impact if used in financial services and transform the sector with its useful features. It is also concluded that majority of the respondents believe that integration of blockchain technology and existing processes is better. However, many respondents also showed few concerns regarding the technology like privacy concerns, technical complexity etc. and they also admit that education and awareness as an important factor to be considered during the adoption of this technology in the sector. Although this technology is still being explored in India, it does have good scope in Future and the government and the banks should research further about blockchain to use its benefits and enhance the services while also considering the risks and outcomes. The Government should also take initiatives to educate and create awareness regarding blockchain technology among the public.

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