International Journal of Early Childhood Special Education (INT-JECSE)
DOI:10.48047/intjecse/v14i5.1157 ISSN: 1308-5581 Vol 14, Issue 05 2022

Role of Blockchain Technology in Fintech Implementation: An Empirical Study

Namrata Prakash
Associate Professor, School of Management, Graphic Era Hill University,
Dehradun Uttarakhand India

Abstract
The emergence of blockchain technology has led to considerable changes in the financial technology (FinTech) sector in recent years. With fintech being one of the most impacted industries, blockchain, which was first presented as the underpinning technology for cryptocurrencies, has become a potent instrument for revolutionizing many industries. The role of blockchain technology in the development of fintech solutions is examined, with special emphasis on the advantages, difficulties, and possible uses of the technology. For storing, confirming, and carrying out financial transactions, blockchain technology enables a decentralized and transparent system. It does away with the need for middlemen like banks or clearinghouses, which lowers costs, increases efficiency, and boosts security. Data integrity is ensured by blockchain's immutability and cryptographic features, which reduce the possibility of fraud and unauthorised changes. Blockchain is a perfect fit for several fintech use cases, including payment processing, smart contracts, identity verification, supply chain financing, and asset tokenization, because of these characteristics. 185 respondents is the sample size considered in this study. T test and mean was applied to find the result of study.
Keywords: Fintech, Decentralization, Security, Transparency, Money Laundering

Introduction:
Blockchain technology has become a disruptive force in the fields of finance and technology, revolutionizing how transactions are carried out and financial institutions' function. Blockchain technology has attracted a lot of attention recently in financial technology, or fintech, and it has the potential to change the financial industry's environment. Blockchain technology is international in nature, it is difficult to efficiently implement current regulatory frameworks. Because blockchain systems are transparent and decentralized, conventional financial regulations might not be the best fit **(Allen et al. 2021).**
Fundamentally, blockchain is a distributed and decentralized ledger technology that makes it possible to record transactions in a secure and open manner. Every participant has access to the exact same copy of the ledger, which is operated on a network of computers called nodes. To create an immutable record of all previous transactions, transactions are organized into blocks and added to the chain in a chronological order. Blockchain's decentralized structure eliminates the need for a centralized authority, like a bank, to verify and authenticate transactions. The technology must be utilized in accordance with know-your-customer (KYC) and anti-money laundering (AML) laws, according to regulatory authorities **(Peter & Moser 2017).**
The advancement of financial systems' transparency is another benefit of blockchain technology. Every transaction is recorded on a distributed ledger, where everyone in the network may see it. In addition to fostering greater participant trust, this transparency also makes it easier to comply with regulations. Regulators and auditors can use the blockchain to check transactions for conformity with applicable legislation, reducing the need for expensive and time-consuming audits. Blockchain technology not only promises more security and transparency, but also considerable gains in efficacy and cost-efficiency **(Shoker, A. 2021).**
The inclusion of blockchain technology in fintech has the potential to open up financial services to under- and unbanked communities all over the world. The global financial system is now accessible to people without access to traditional banking services because to the use of blockchain-based platforms and

digital currencies. By empowering people to handle the finances more skillfully, this inclusion can promote economic growth. Overall, the financial industry is prepared to change because of the use of blockchain technology **(Ross, E. S. 2017).**

Literature Review:

The term "fintech," which stands for "financial technology," describes the creative ways that technology is used to supply financial services and goods. It includes a broad range of tools and services that take use of developments in peer-to-peer lending, crowdfunding, robo-advisors, digital payments, mobile banking, and other fields. Traditional financial procedures are intended to be streamlined and improved by fintech to make them more effective, available, and user-friendly. On the other hand, blockchain technology is a distributed ledger technology that enables secure and open transactions without the need for middlemen **(Brophy, R. 2020).**

By doing away with middlemen, lowering transaction costs, and speeding up the process, blockchain can completely transform cross-border payments and remittances. Blockchain-based platforms can enable direct peer-to-peer transactions without the use of conventional banking infrastructure while also offering real-time settlement, enhancing security through encryption. Blockchain technology can be used by fintech companies to automate the loan process by generating smart contracts. These contracts handle repayment conditions, check identities, and automatically execute loan agreements. The immutability of blockchain ensures transparent and auditable lending records, lowering fraud and improving creditworthiness evaluation**(Garg et al. 2021).**

Significant quantities of energy are used by blockchain networks, especially those that use proof-of-work (PoW) consensus algorithms. Concerns about sustainability and environmental effect have been raised due to the high energy consumption involved with mining and confirming transactions on the blockchain. Since blockchain technology is international in nature, it is difficult to efficiently implement current regulatory frameworks. Because blockchain systems are transparent and decentralized, conventional financial regulations might not be the best fit **(Yakubovskiy, S., & Kyrychenko, M. 2018).**

Real estate, works of art, and even intellectual property, which were previously difficult to invest in, are now more accessible because to blockchain's ability to permit fractional ownership and asset tokenization. People may have access to a greater selection of investment opportunities, more liquidity, and improved transparency because of fintech platforms that use blockchain. Identity management and verification can be done securely and decentralized using blockchain technology **(Xu et al. 2019).**

Blockchain offers a public, unchangeable ledger where all transactions are tracked. Due to the ability of all parties to monitor and verify transactions in real-time, there is no longer a need for intermediaries like clearinghouses or auditors. It raises interparty trust and lowers the chance of fraud or manipulation. For financial transactions, blockchain guarantees a high level of security. Hackers will find it very challenging to change or tamper with the data recorded on the blockchain due to its cryptographic methods and decentralized structure **(Choo et al. 2020).**

A transaction is virtually unchangeable after it has been added to the blockchain. This indicates that the transaction cannot be changed, eliminated, or reversed without the agreement of all network users. A further layer of protection is added by the immutability of blockchain records, which also removes the need for expensive and time-consuming reconciliation procedures. Blockchain runs on a distributed computer network called a "node," where each node keeps a copy of the blockchain. With the help of this decentralized architecture, transactions may be supervised and verified without the need for a central authority or middleman like a bank or a government **(Woodside et al. 2017).**

Scalability of blockchain technology is one of its main problems. The transaction throughput and speed of traditional blockchains like Bitcoin and Ethereum are constrained. The blockchain network may get crowded as the quantity of transactions rises, which would result in delays and more expensive transactions. For fintech applications that need huge transaction volumes and quick processing times, this scaling problem is a barrier. Getting different blockchain platforms and current financial systems to communicate with one another is a hurdle as well. It becomes difficult to develop seamless connection

and data exchange between blockchain networks since there are so many of them and they all have various protocols and standards **(Schulz et al. 2020).**

Blockchain technology faces difficulties being used in the fintech industry since it operates in a relatively undeveloped regulatory context. Due to regulatory frameworks' frequent inability to keep up with blockchain technology's rapid improvements, there is uncertainty and legal complexity. The banking sector's adoption of blockchain technology may be hampered by worries about compliance, identity verification, and anti-money laundering (AML) regulations. Blockchain offers transparency and immutability, but it also has issues with data protection and privacy. Sensitive financial information might not be appropriate for public blockchains, which store all transaction data on-chain **(Xevgenis et al. 2020).**

Objective of the Study

1. Identifying the Role of Blockchain Technology in Fintech Implementation.
2. To ascertain how Blockchain has transformed Fintech from traditional financial system.

Methodology

The study is empirical in nature. Number of respondents was 185. Structured questionnaire was prepared for collection of data. Mean and t-test was applied to find result of study. Convenience sampling was the method of sampling.

Findings of study

Table 2. Role of Blockchain Technology in Fintech Implementation

Serial. No.	Survey Statement	Mean	T-Value	Sig.
1.	Blockchain technology enables a decentralized and transparent system for storing, confirming, and carrying out financial transactions	4.27	17.578	0.000
2.	Blockchain has removed the need for middlemen like banks or clearinghouses, that have lowered the costs, increases efficiency, and boosted security	4.19	16.575	0.000
3.	Immutability and cryptographic features of blockchain ensures data integrity, which reduce the possibility of fraud and unauthorised changes	4.03	14.575	0.000
4.	Blockchain is a distributed and decentralized ledger technology to record transactions in a secure and open manner	4.13	15.667	0.000
5.	Distributed structure of blockchain eliminates the need for a centralized authority, like a bank, to verify and authentication of transactions	4.00	14.092	0.000
6.	Blockchain promises more security and transparency, and considerable gains in efficacy and cost-efficiency	3.13	1.801	0.037
7.	The inclusion of blockchain technology in Fintech has open up financial services to under- and unbanked communities	4.21	16.923	0.000
8.	Blockchain inclusion can promote economic growth by empowering people to handle the finances more skilfully	4.05	14.750	0.000
9.	Blockchain-based platforms enable direct peer-to-peer transactions without using conventional banking infrastructure	3.17	2.359	0.010

10.	Blockchain offers a public, unchangeable ledger where all transactions are tracked	4.09	15.393	0.000

Table 2 shows mean value of "Role of Blockchain Technology in Fintech Implementation" first statement says that Blockchain technology enables a decentralized and transparent system for storing, confirming, and carrying out financial transactions (mean value 4.27), Blockchain has removed the need for middlemen like banks or clearinghouses, that have lowered the costs, increases efficiency, and boosted security (mean value 4.19). Immutability and cryptographic features of blockchain ensures data integrity, which reduce the possibility of fraud and unauthorized changes (mean value 4.03), Blockchain is a distributed and decentralized ledger technology to record transactions in a secure and open manner (mean value 4.13), Distributed structure of blockchain eliminates the need for a centralized authority, like a bank, to verify and authentication of transactions (mean value 4.00).Blockchain promises more security and transparency, and considerable gains in efficacy and cost-efficiency (mean value 4.13). The inclusion of blockchain technology in Fintech has open up financial services to under- and unbanked communities (mean value 4.21), Blockchain inclusion can promote economic growth by empowering people to handle the finances more skilfully (mean value 4.05), Blockchain-based platforms enable direct peer-to-peer transactions without using conventional banking infrastructure (mean value 3.17), and Blockchain offers a public, unchangeable ledger where all transactions are tracked (mean value 4.09). T-value of statements in a survey in context of Role of Blockchain Technology in Fintech Implementation are found to be significant because t-value of each statement is positively significant because value is less than 0.05.

Conclusion:

In conclusion, blockchain technology has played a transformative role in the implementation of fintech and has enormous promise going forward. Blockchain has been successful, however, there are some barriers to its development. Decentralization, transparency, and security have been introduced into numerous financial operations through blockchain, revolutionizing the financial sector. The capacity to conduct safe and effective peer-to-peer transactions without the use of middlemen is one of the main benefits of blockchain technology. This reduces costs and speeds up transaction processing by doing away with the requirement for traditional financial institutions to act as a middleman. By offering a substitute for fiat currency, blockchain-based cryptocurrencies like Bitcoin and Ethereum have garnered considerable popularity and upended the established financial order. T-value in T test for each statement in context of Role of Blockchain Technology in Fintech Implementation is found to be significant as t-value of statements is positive and significance value also less than 0.05.

References:

Allen, F., Gu, X., & Jagtiani, J. (2021). A survey of fintech research and policy discussion. Review of Corporate Finance, 1, 259-339.

Brophy, R. (2020). Blockchain and insurance: a review for operations and regulation. Journal of financial regulation and compliance, 28(2), 215-234.

Choo, K. K. R., Ozcan, S., Dehghantanha, A., & Parizi, R. M. (2020). Blockchain ecosystem—technological and management opportunities and challenges. IEEE Transactions on Engineering Management, 67(4), 982-987.

Garg, P., Gupta, B., Chauhan, A. K., Sivarajah, U., Gupta, S., & Modgil, S. (2021). Measuring the perceived benefits of implementing blockchain technology in the banking sector. Technological Forecasting and Social Change, 163, 120407.

Peter, H., & Moser, A. (2017). Blockchain-applications in banking & payment transactions: Results of a survey. European financial systems, 141, 141.

Ross, E. S. (2017). Nobody puts blockchain in a corner: The disruptive role of blockchain technology in the financial services industry and current regulatory issues. Catholic University Journal of Law and Technology, 25(2), 7.

Schulz, K. A., Gstrein, O. J., & Zwitter, A. J. (2020). Exploring the governance and implementation of sustainable development initiatives through blockchain technology. Futures, 122, 102611.
Shoker, A. (2021). Blockchain technology as a means of sustainable development. One Earth, 4(6), 795-800.
Woodside, J. M., Augustine Jr, F. K., & Giberson, W. (2017). Blockchain technology adoption status and strategies. Journal of International Technology and Information Management, 26(2), 65-93.
Xu, M., Chen, X., & Kou, G. (2019). A systematic review of blockchain. Financial Innovation, 5(1), 1-14.
Yakubovskiy, S., & Kyrychenko, M. (2018). Role of blockchain technology in the development of global information technology and fintech markets in the conditions of globalization. Bulletin of Mariupol State University, 15, 126-132.
Xevgenis, M., Kogias, D. G., Karkazis, P., Leligou, H. C., & Patrikakis, C. (2020). Application of blockchain technology in dynamic resource management of next-generation networks. Information, 11(12), 570.