Shodh Sari-An International Multidisciplinary Journal

2026, Vol. 05, Issue 03, 107-113
ISSN: 2959-1376
DOI: https://doi.org/10.59231/SARI7947

Fintech and Blockchain Transforming Modern Commerce Systems

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Abstract

Financial Technology (Fintech) and blockchain technology have significantly transformed modern commerce by improving financial transactions, enhancing transparency, and reducing operational inefficiencies. Traditional commerce systems relied heavily on centralized financial institutions, which often involved delays, high transaction costs, and limited accessibility. The integration of fintech platforms and blockchain technology has introduced decentralized financial services, digital payment systems, smart contracts, and secure data management practices. A quantitative research design was adopted using a structured questionnaire administered to 100 respondents, consisting of business professionals, entrepreneurs, and commerce students. Hypothesis testing was conducted to determine the relationship between fintech adoption, blockchain integration, and perceived commercial efficiency. Statistical analysis, including correlation and regression, was used to evaluate the results. The findings indicate that fintech and blockchain significantly improve transaction speed, transparency, and financial inclusion while reducing operational costs and fraud risks. However, regulatory uncertainty, technological complexity, and lack of awareness remain major challenges. The study contributes to digital financial innovation literature and offers actionable insights for stakeholders.

Keywords: Fintech, Blockchain, Digital Commerce, Financial Innovation, Smart Contracts, Financial Technology

1. Introduction:

Technological innovation has reshaped global commerce over the past decade. Among the most significant developments are financial technology (fintech) and blockchain technology. Fintech refers to the use of technology to improve financial services, including digital payments, online banking, peer-to-peer lending, and automated financial systems. Blockchain is a

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decentralized digital ledger that records transactions securely and transparently.

Smart Contracts, a core component of blockchain systems, are self-executing digital agreements coded on blockchain networks that automatically enforce contractual terms when predefined conditions are met. They eliminate intermediaries, reduce transaction costs, and enhance trust in commercial transactions.

Modern commerce increasingly relies on digital financial infrastructure. Businesses now operate in interconnected global environments where fintech innovations such as mobile payments, digital wallets, and automated systems have simplified transactions.

Blockchain further enhances this ecosystem by enabling decentralisation, transparency, and immutability of records. Smart contracts, secure identities, and distributed ledgers have made blockchain highly relevant in commerce and supply chains.

Research Gap: Despite extensive literature on fintech and blockchain independently, there is a lack of empirical studies integrating both technologies to evaluate their combined impact on commercial efficiency, transparency, and consumer trust using statistical validation methods. Additionally, limited research exists on how users perceive these technologies in emerging economies like India.

This study bridges this gap by providing quantitative evidence on fintech–blockchain integration in commerce.

2. Literature Review:

Fintech in Modern Commerce

Fintech has revolutionized financial services by enabling faster, cheaper, and more accessible financial transactions. According to Arner, Barberis, and Buckley (2016), fintech innovations have transformed the financial industry by improving financial inclusion and enabling new digital business models.

Digital payment systems such as mobile wallets and online banking platforms have significantly increased the speed and convenience of financial transactions. Gomber et al. (2018) argue that fintech solutions reduce transaction costs and enhance customer experience in financial services.

Blockchain Technology in Commerce

Blockchain technology was initially introduced as the underlying system for cryptocurrencies such as Bitcoin. However,

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its applications have expanded to various sectors, including finance, supply chain management, healthcare, and commerce.

Tapscott and Tapscott (2017) suggest that blockchain has the potential to transform the global economy by providing secure, transparent, and decentralized transaction systems. Blockchain eliminates the need for intermediaries, thereby reducing transaction costs and increasing efficiency.

Fintech–Blockchain Integration

The integration of fintech platforms with blockchain technology offers several advantages for commerce. Smart contracts enable automated transactions without intermediaries, while blockchain-based financial systems enhance transparency and security.

Zetzsche et al. (2020) highlight that blockchain-based fintech solutions can improve financial inclusion, especially in developing economies where access to traditional banking services is limited.

However, the adoption of blockchain in commerce is still in its early stages due to regulatory uncertainties and technological barriers.

3. Research Objectives:

- To examine the role of fintech in improving commercial transactions.
- To analyze the impact of blockchain technology on transparency and security in commerce.
- To study the relationship between fintech adoption and business efficiency.
- To evaluate challenges in implementing fintech and blockchain in commerce.

4. Research Hypotheses:

$H0_1$: Fintech adoption has no significant impact on commercial transaction efficiency.

$H1_1$: Fintech adoption significantly improves commercial transaction efficiency.

$H0_2$: Blockchain technology does not significantly enhance transparency in commerce.

$H1_2$: Blockchain technology significantly enhances transparency in commerce.

$H0_3$: There is no relationship between fintech usage and consumer trust in digital commerce.

$H1_3$: Fintech usage positively influences consumer trust in digital commerce.

5. Research Methodology:

Research Design: This study uses a quantitative research approach to analyze the

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impact of fintech and blockchain on commerce.

Sample Size: A total of 100 respondents participated in the survey.

Sampling Technique: Convenience sampling was used.

Respondent Profile

Respondents included:

- Business owners
- Commerce students
- Financial professionals
- Digital payment users

Data Collection Method

Primary data was collected using a structured questionnaire consisting of Likert scale questions.

Data Analysis Tools

The collected data was analyzed using:

1. Percentage analysis
2. Correlation analysis
3. Regression analysis
4. Hypothesis testing

6. Data Analysis and Interpretation:

Table 1: Awareness of Fintech Applications

Response	Number of Respondents	Percentage
Highly Aware	45	45%
Moderately Aware	35	35%
Slightly Aware	15	15%
Not Aware	5	5%

Interpretation: The majority of respondents (80%) show moderate to high awareness of fintech technologies.

Table 2: Perceived Benefits of Blockchain

Benefit	Respondents
Increased Transparency	30
Secure Transactions	28
Reduced Fraud	22
Faster Transactions	20

Interpretation: Transparency and transaction security are perceived as the major benefits of blockchain technology.

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7. Correlation Analysis:

Table 3: Correlation Matrix

Variables	Fintech Adoption	Commercial Efficiency	Consumer Trust
Fintech Adoption	1.00	0.68	0.72
Commercial Efficiency	0.68	1.00	0.65
Consumer Trust	0.72	0.65	1.00

Interpretation: The correlation values indicate strong positive relationships among fintech adoption, efficiency, and consumer trust, confirming interdependence among variables.

8. Regression Analysis:

Table 4: Regression Results

Dependent Variable	Independent Variable	Beta (β)	p-value	Result
Commercial Efficiency	Fintech Adoption	0.62	0.002	Significant
Transparency	Blockchain Integration	0.58	0.01	Significant
Consumer Trust	Fintech Usage	0.64	0.004	Significant

Regression Equations

1. Commercial Efficiency = 1.25 + 0.62 (Fintech Adoption)
2. Transparency = 1.10 + 0.58 (Blockchain Integration)
3. Consumer Trust = 0.95 + 0.64 (Fintech Usage)

Interpretation: All regression models show statistically significant relationships ($p < 0.05$), validating the hypotheses.

9. Visual Comparison:

Traditional vs Blockchain-Based Commerce

Aspect	Traditional Commerce	Blockchain-Based Commerce
Intermediaries	Multiple (banks, agents)	Minimal or none
Transaction Speed	Slow	Fast
Cost	High	Low

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Transparency	Limited	High
Trust Mechanism	Institutional	Algorithmic/Distributed
Fraud Risk	Higher	Lower

Insight: Blockchain reduces intermediaries, improves transparency, and enhances efficiency.

10. Findings:

The major findings of the study include:

- Fintech applications significantly improve transaction speed and efficiency.
- Blockchain technology enhances transparency and reduces fraud risk.
- Consumers show greater trust in digital financial platforms when security is ensured.
- Businesses adopting fintech experience improved operational efficiency.
- Regulatory and technological challenges still limit large-scale blockchain adoption.

11. Challenges in Fintech and Blockchain Adoption:

Several barriers affect the adoption of fintech and blockchain technologies:

- Regulatory uncertainty
- Lack of technical expertise
- Cybersecurity risks
- High implementation costs
- Limited awareness among businesses

12. Conclusion and Expanded Future Research:

Fintech and blockchain technologies are transforming modern commerce by enabling faster, safer, and more efficient financial transactions. The integration of digital financial platforms with blockchain systems enhances transparency, reduces costs, and strengthens consumer trust.

The study confirms that fintech significantly improves efficiency and trust, while blockchain enhances transparency and security. However, regulatory clarity, infrastructure, and digital literacy are essential for large-scale adoption.

Future Research Directions

Future studies can explore:

• Environmental Impact of Blockchain

Comparative analysis of Proof of Work (PoW) vs Proof of Stake (PoS) mechanisms, focusing on energy consumption and sustainability.

• Central Bank Digital Currencies (CBDCs)

Examining how government-backed digital

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currencies can integrate with fintech and blockchain to reshape monetary systems.

- Industry-Specific Applications

Use of blockchain in supply chains, healthcare, and international trade.

- Behavioural Adoption Studies

Understanding consumer psychology and resistance toward fintech innovations.

- Regulatory Frameworks

Cross-country comparison of fintech and blockchain regulations.

References:

1. Arner, D. W., Barberis, J., & Buckley, R. P. (2016). The evolution of fintech. *Georgetown Journal of International Law*, *47*(4), 1271–1319.
2. Gomber, P., Koch, J., & Siering, M. (2018). Digital finance and fintech. *Journal of Business Economics*, *87*(5), 537–580.
3. Tapscott, D., & Tapscott, A. (2017). *Blockchain revolution: How the technology behind Bitcoin is changing money, business, and the world*. Penguin.
4. Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Barberis, J. (2020). Regulating fintech in the digital age. *Journal of Banking Regulation*, *21*(2), 109–120.
5. Lee, I., & Shin, Y. (2018). Fintech: Ecosystem and business models. *Business Horizons*, *61*(1), 35–46.
6. Schueffel, P. (2017). Taming the beast: A scientific definition of fintech. *Journal of Innovation Management*, *4*(4), 32–54.
7. Casino, F., Dasaklis, T., & Patsakis, C. (2019). Blockchain-based applications. *Telematics and Informatics*, *36*, 55–81.
8. Yermack, D. (2017). Corporate governance and blockchains. *Review of Finance*, *21*(1), 7–31.

Received: Apr 17, 2026
Accepted: May 28, 2026
Published: Jul 01, 2026