

The Role of Bitcoin in the Emerging Digital Financial System: A Study on Investor Awareness

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Abstract:

The rapid growth in digital finance, Bitcoin has become an increasingly significant and somewhat complex asset for retail investors in developing countries, such as India. The focus of this study is to examine the relationship between investor awareness, perception, and investment behaviour in India's evolving digital finance landscape. To conduct this research, primary data was collected using a quantitative, survey-based methodology from 100 urban retail investors, via an online survey and structured questionnaire. A number of dimensions of awareness were assessed, including knowledge of blockchain technology, transaction processes, security and risks associated with the technology, as well as regulatory aspects. Descriptive statistics, correlation analysis, regression analysis, and ANOVA were used as analytical tools for data analysis. Overall, participants were likely to perceive Bitcoin positively both as an investment and as a potential avenue for financial inclusion. Respondents indicated some uncertainty about making purchases with Bitcoin and therefore believed that it lacks the stability of a fiat currency and therefore is unlikely to usurp traditional currencies. In addition, most respondents had only a moderate level of awareness of Bitcoin and there was a clear positive relationship ($r = 0.437$) between an understanding of blockchain and willingness to invest. Although demographic characteristics, including age and income, did not significantly influence behavioural intentions, trust and psychology were found to be influential. Respondents showed comparatively low levels of regulatory awareness regarding digital currency/wallets, indicating a knowledge gap.

Keywords: Bitcoin, Cryptocurrency, Investor Awareness, Financial Literacy, Investment Behaviour, Risk Perception, Digital Finance.

1. Introduction

Digital finance has revolutionized financial transactions by providing faster, more accessible, and technology-based services through innovations like mobile banking, digital payments, and online investing. Innovations such as UPI, robo advisors, and peer-to-peer

lending have helped create more financial inclusion. Bitcoin is one of those innovations and is representative of the new way of doing business without the need for a middleman; the virtual currency is created using blockchain technology and enables secure transactions without an intermediary. Since it was created following the 2008 financial crisis, Bitcoin has grown into an international asset that people view as "digital gold"/a means of diversifying an investment portfolio. The combination of widespread digital adoption and the growing number of fintech companies in India provide the necessary foundation for Bitcoin to continue to grow in importance in the Indian economy; therefore, it is vital for individuals to educate themselves before making investments in crypto-currency so that they can minimize risk and maintain stability in their portfolio.

1.1 Need for the Study

An emerging economy such as India has very little research done on Bitcoin and how it works, especially when it comes to retail investors. This creates a need to help educate retail investors on Bitcoin, reduce the amount of false information, and provide ways for retail investors to make informed decisions.

1.2 Factors Influencing Bitcoin Adoption

In India, technology and its advancement, demographic factors (youthful population), digital infrastructure enabled by fintech innovation are among several forces having a large impact on Bitcoin adoption and investor behavior.

1.3 Problem of Statement

Despite growing interest, many investors do not understand Bitcoin's functioning, risks, security or regulations. Such results in speculation, dependence on false data, misjudgment of risk and exposure to possible losses.

1.4 Significance of the Study

The research will add to the academic literature, aid in drafting policies, protect investors, build awareness of financial inclusion, and develop better fintech products and future digital financial infrastructure systems.

1.5 Objectives

- To analyze the evolving role of Bitcoin in India's digital financial system as an investment asset and medium of exchange.
- To assess the level of awareness among Indian retail investors regarding Bitcoin, including blockchain concepts, security measures, risks, and regulatory aspects.
- To evaluate the relationship between investor awareness and investment behaviour, particularly its impact on participation, risk management, and trading strategies.

1.6 Scope of the Study

The study focuses on Indian retail investors (18–55 years), mainly in urban/semi-urban areas, examining Bitcoin-specific awareness and behavior using a quantitative, cross-sectional approach.

2. Literature Review

Several sources indicate that with the rise of Bitcoin in the world of finance, there are gaps in how knowledgeable investors are and how they behave toward this new digital asset. In a paper by **Ozili (2022)**, he defines Decentralized finance (DeFi) as a new way of offering financial services that provide financial access, increased transparency, and greater efficiency; however, he also lists various risks to investing in DeFi, including uncertainty about regulations and vulnerability to hacks and cyber-attacks. All these different sources are giving us a clearer picture of the overall digital landscape for Bitcoin. Research findings by **Hong et al. (2025)** and **Wu (2025)** demonstrated how institutional developments such as Bitcoin exchange-traded funds (ETFs) have contributed to an increase in Bitcoin's correlation with traditional assets (some studies suggest it has become less of an alternative asset class and a more recognised type of financial instrument). Therefore the result could mean that Bitcoin may lose its benefit of being a diversifier, highlighting its changing roles within today's portfolios. **Matharoo (2023)** and **Mungoli (2023)** focused their research on the economic and structural concerns of Bitcoin and emphasise that the new digital asset is impacting the capabilities of financial systems by promoting financial inclusion and facilitating decentralised transactions, while also highlighting challenges such as volatility, regulatory uncertainty, and complexity regarding technology.

Both behaviour and investor awareness are important part of the studies. **Chikanal et al. (2024)** and **Mythili et al. (2025)** discovered that Indian investors have a moderate degree

of awareness, with social media platforms and peer influences being very important. Investors make decisions based on expected high returns instead of making rational investment decisions based on fact. **Almeida & Gonçalves (2023)** found that herding behaviour and emotional decision-making are primary drivers of behaviours associated with cryptocurrency investment. Within many of these studies, the importance of financial literacy is a common theme. The **OECD (2025)** reported that low levels of digital financial literacy are a factor in risks such as fraud and volatility and that these same investors are at a higher risk. **Wang and Bai (2025)** indicated that younger (digital) literate, and financially literate individuals are more likely to invest in cryptocurrencies; however, increases in awareness will not necessarily lead to rational behaviours by these same individuals.

In summary, previous research has shown that Bitcoin is a ground breaking monetary innovation; however, three important factors have been identified as influencing the adoption and appropriate usage of Bitcoin: the level of knowledge investors have regarding this new technology; regulatory clarity surrounding the use of cryptocurrency; and an understanding of how to use and trade cryptocurrency.

3. RESEARCH METHODOLOGY

3.1 Research Design

An explanatory and descriptive approach was used to collect data for this study. Descriptive research helps define investor awareness and behaviour; whereas, explanatory research examines relationships between investment confidence and investor awareness (risk perception)

3.2 Nature of the Study

Methodology: quantitative, analytical and cross-sectional study. Cross-sectional data was collected at a single point in time through structured questionnaires and statistically analyzed for patterns and relationships.

3.3 Sources of Data

The primary data was obtained from a structured questionnaire based on Likert scale. Theoretical underpinning through secondary data gathered from journals, reports, books and regulatory publications.

3.4 Sampling Technique

A convenience sampling method was employed which targeted digitally active Indian retail investors already familiar with Bitcoin.

3.5 Sample Size

The number of valid responses in the study is 100 and the statistical analysis including correlation, regression and ANOVA were done accordingly.

3.6 Research Instrument

A structured questionnaire with two sections: demographics and Bitcoin awareness, perception, and behaviour, measured using a 5-point Likert scale.

3.7 Variables of the Study

Independent variables: awareness, regulation knowledge, security trust, information source trust, risk perception, demographics. Dependent variables: investment behaviour, confidence, willingness to invest, and Bitcoin role perception.

3.8 Tools Used for Data Analysis

- Descriptive statistics (mean, SD, frequency)
- Correlation (r : -1 to +1)
- Regression: $Y = a + b_1X_1 + b_2X_2 + b_3X_3$
- ANOVA: significance at $p < 0.05$

Table 3.1: Variables and Measurement

Category	Variables Covered	Description	Measurement
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Demographic Variables	Age, Gender, Education, Occupation, Income, Experience	Background details of respondents	Categorical / Ordinal
Bitcoin Factors	RBScore, AWScore, PCScore	Role, awareness, and confidence towards Bitcoin	Mean (Likert scale 1–5)
Key Influencing Variables	Regulation, Security, Confidence	Factors affecting investment decisions	Likert scale (1–5)
Statistical Methods	Descriptive, Correlation, Regression, ANOVA,	Tools used for analysis and hypothesis testing	Numerical Analysis

Source: Author's Creation4

4. Data Analysis and Interpretation

4.1 Objective 1: To analyze the evolving role of Bitcoin in India's digital financial system as an investment asset and medium of exchange.

Table 4.1: Descriptive Statistics

Statement	Mean	Median	Mode	Std. Deviation	Skewness
Bitcoin is a key part of the global financial system	3.45	3.5	3	1.122	-0.310
Bitcoin adoption improves digital payment systems	3.39	4	4	1.180	-0.578
Bitcoin promotes financial inclusion for the unbanked	3.50	4	4	1.124	-0.523

Bitcoin has the potential to replace fiat currencies	3.33	3	4	1.111	-0.463
Bitcoin increases transaction transparency	3.45	4	4	1.122	-0.616
Bitcoin transfers are more efficient than bank transfers	3.26	3	4	1.151	-0.325
Bitcoin removes the need for banking intermediaries	3.46	4	4	1.150	-0.450

Source: Author's Creation

4.2 Objective 2: To assess the level of awareness among Indian retail investors regarding Bitcoin, including blockchain concepts, security measures, risks, and regulatory aspects.

Table 4.2: Correlation Matrix

Variable	8	9	10	11	12	13	14
8. Bitcoin transactions	1.000	0.424	0.255	0.426	0.161	0.468	0.482
9. Blockchain technology	0.424	1.000	0.499	0.425	0.219	0.402	0.520
10. Investment risks	0.255	0.499	1.000	0.442	0.392	0.369	0.427
11. Exchanges function	0.426	0.425	0.442	1.000	0.463	0.453	0.451
12. Legal rules	0.161	0.219	0.392	0.463	1.000	0.513	0.302
13. Secure Buy/Sell	0.468	0.402	0.369	0.453	0.513	1.000	0.448
14. Differentiate Bitcoin	0.482	0.520	0.427	0.451	0.302	0.448	1.000

Source: Author's Creation

4.3 Objective 3: To evaluate the relationship between investor awareness and investment behaviour, particularly its impact on participation, risk management, and trading strategies.

Table 4.3 Correlation Table

	<i>Blockchain technology.</i>	<i>Knowledge level</i>
Blockchain technology.	1	0.437413029
knowledge level	0.437413029	1

Source: Author's Creation

4.4 Combined Analysis of Objectives

Table 4.4: Combined Analysis Table

Objective	Key Evidence	Statistical Insight	Interpretation
Role of Bitcoin as Investment & Medium of Exchange	Mean (3.26–3.50), Median (3–4), Mode (4), Std. Dev (1.11–1.18), Negative Skewness	All mean values > 3; skewness < 0	The findings demonstrate that there is somewhat of a favourable opinion of how Bitcoin fits into the modern digital financial system. The favourable views attributable to financial inclusion (3.50) and the removal of intermediary's (3.46) suggest that respondents recognize the decentralized and inclusive features of Bitcoin. On the other hand, the lower scores related to efficiency (3.26) and replacing the current fiat system (3.33) also suggest some valid concerns about volatility, scalability, and regulatory status.
Level of Investor Awareness	Correlation Matrix (r = 0.161 to 0.520 across Q8–Q14)	All correlations positive; strongest r = 0.520	The positive correlations illustrate that the dimension of awareness connects in such a way that when you learn about one dimension it enhances your ability to learn other areas. The two strongest relationships (e.g., understanding/differentiating blockchain, r = 0.520) suggest that a clear conceptual understanding creates general awareness and improves overall knowledge; however, the two weakest relationships (i.e., legal knowledge, r = 0.161) show that there is a

			disconnect when it comes to understanding regulatory aspects of investing.
Awareness– Investment Behaviour Relationship	Correlation (r = 0.437 between blockchain knowledge & willingness to invest)	Moderate positive relationship	According to the analysis, with rising degrees of awareness comes a greater level of interest in engaging financially (0.437 correlation), indicating that although there is some correlation between degree of financial knowledge (i.e., investor confidence and deciding to invest), it is not entirely based on the knowledge of finance.

Source: Author’s Creation

5. Conclusion

5.1 Overview

This study examined the role of Bitcoin in India’s emerging digital financial system with a focus on investor awareness and behaviour. The findings reveal that Bitcoin is moderately and positively perceived as both an investment asset and a medium of exchange, with mean values consistently above the neutral benchmark. Respondents particularly recognized its role in financial inclusion and disintermediation, aligning with prior research such as Nakamoto Satoshi (2008), which emphasized decentralization as a core feature. However, cautious attitudes toward efficiency and replacing fiat currencies reflect concerns highlighted in studies like Yermack David (2015), which noted Bitcoin’s volatility and limitations as a currency. The study also found that investor awareness is structured but uneven, with strong understanding of blockchain and transactions but weaker knowledge of regulatory aspects. This supports findings by Lusardi Annamaria, who emphasized that financial literacy significantly shapes investment decisions. Importantly, a moderate positive relationship ($r = 0.437$) confirms that awareness enhances willingness to invest, indicating that knowledge reduces uncertainty and improves participation. In contrast, demographic factors such as age and income showed no significant influence, suggesting that behavioural and knowledge-based factors play a more critical role. Regression results further indicate that technological trust and psychological perceptions influence adoption, though explanatory

power remains limited ($R^2 = 0.145$), highlighting the complexity of cryptocurrency behaviour.

5.2 Major Findings:

- The study found that Bitcoin is widely perceived as a tool for financial inclusion, especially for unbanked populations, with the highest agreement among respondents.
- Respondents agreed that Bitcoin helps reduce dependence on traditional banking intermediaries and is increasingly seen as part of the global financial system, though not yet a full replacement for fiat currency.
- There is moderate confidence in Bitcoin's efficiency, as respondents showed some reservations about its superiority over traditional bank transfers and its long-term dominance.
- Investor awareness is positively interconnected, with strong relationships between blockchain understanding and practical skills, indicating a solid foundational knowledge among retail investors.
- A significant gap exists in legal and regulatory awareness, as knowledge of rules and policies governing cryptocurrency remains relatively weak compared to technical understanding.
- Demographic factors such as age and income do not significantly influence investment behaviour, suggesting that Bitcoin investment decisions are largely independent of socio-economic background.
- There is a moderate positive relationship between awareness and investment behaviour, showing that higher knowledge levels directly increase willingness to invest in Bitcoin.
- Bitcoin adoption is influenced by multiple factors, including trust in transaction security, perception of market volatility, and information sources, with trust emerging as the most important factor, though overall explanatory power remains moderate.

5.3 Suggestions:

For policymakers, clearer regulatory frameworks and investor protection measures are essential to reduce uncertainty and build trust. Financial institutions and educators should promote targeted financial literacy programs, especially focusing on regulatory awareness and risk management. Cryptocurrency platforms must enhance security transparency and user

education. Investors are advised to rely on informed decision-making rather than speculative trends.

5.4 Limitations:

The study is limited by convenience sampling, a relatively small sample size (100), and a cross-sectional design, restricting generalizability and causal inference. Self-reported data may also introduce bias, and rapidly evolving market conditions may affect the relevance of findings over time.

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