





# “Uncovering the Bitcoin investment behavior: An emerging market study”

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# UNCOVERING THE BITCOIN INVESTMENT BEHAVIOR: AN EMERGING MARKET STUDY

## Abstract

Bitcoin remains a popular investment choice despite the regulatory obstacles and failures of many crypto firms. This intriguing behavior of investors necessitates calls for more in-depth research. This study explores the underlying motivations behind the intention to invest in Bitcoin by considering inaction regret aversion, overconfidence bias, herding, risk affinity, profit expectancy, perceived ease of investing, and social media influence in shaping the investors' attitude towards investing in Bitcoin and consequently on behavioral intention to invest in Bitcoin. The study employs PLS-SEM and mediation analysis on a sample of 439 individuals from India with no history of cryptocurrency trading or investment. Path analysis demonstrates that inaction regret aversion, risk affinity, profit expectancy of Bitcoin, perceived ease of investing in Bitcoin, and social media influence are significant positive predictors of attitude toward investing in Bitcoin. Notably, profit expectancy remains the most relevant variable in the stated context. Attitude toward investing in Bitcoin positively and significantly influences the behavioral intention to invest in Bitcoin. The current study also indicates the significance of attitude as a mediator in the mentioned context.

## Keywords

Bitcoin, investor traits, herding, overconfidence bias, regret aversion, social media influence, investment intention, attitude

## JEL Classification

D91, G11, G40, G41

## INTRODUCTION

Bitcoin, the leading cryptocurrency, has been revolutionizing the financial landscape since its inception in 2009. It is a decentralized digital currency that allows users to carry out peer-to-peer financial transactions securely without the involvement of intermediaries like banks and financial institutions. Despite providing financial autonomy and security to its users, Bitcoin has been the subject of several criticisms, especially as an investment vehicle. First, Bitcoin is characterized by very high price volatility. For instance, after reaching its peak in November 2021, when it surpassed \$68,600, Bitcoin witnessed a sharp decline in value. It fell below the \$17,000 mark in November 2022, only to cross a new high of \$71,000 in March 2024. Such volatility makes Bitcoin a highly speculative and risky instrument. Second, the prices of Bitcoin are autonomous and lack intrinsic value. Unlike traditional assets like stocks that generate cash flows, Bitcoin derives its value from investors' beliefs, expected popularity, and market demand. Moreover, there is a high uncertainty around the regulatory framework for Bitcoin. While some governments have banned cryptocurrencies, some have levied heavy taxation on crypto transactions, and others have allowed partial integration into their financial systems. This uncertainty poses a significant risk for investors.

However, despite such complexities and challenges, Bitcoin is advocated as a relevant asset amongst investors. Several investors are attracted

to Bitcoin due to its return potential. They see the high volatility as an opportunity to generate high returns. Some investors are drawn to Bitcoin's underlying technology, which provides an alternative to traditional financial systems. The social media hype around Bitcoin, especially as a 'quick rich' instrument or the next 'big' thing in the financial world, has also got traction from several investors. Such stories have amplified the overconfidence and the fear of missing out among investors, leading them to invest in Bitcoin based on social proof rather than objective analysis. Additionally, many investors have also invested in Bitcoin to avoid any regret of not investing in Bitcoin and thereby forgoing payoffs. The above suggests that underlying motivations to invest in Bitcoin entail a complex interplay of factors, including return expectation, technological beliefs, social media influence, minimizing regret, and psychological factors.

## 1. LITERATURE REVIEW AND HYPOTHESES

Investors typically invest in equity class based on factors like financial returns, company financials, and perceptions about a company/product/management/brand (Nagy & Obenberger, 1994), amongst others. However, many of these factors are absent in the case of Bitcoin. The prices of Bitcoin are autonomous and do not depend on the price of traditional financial assets like stock or bonds or traditional indicators like interest rates and geopolitical factors, amongst others (Chen, 2018). Moreover, since the value of Bitcoin is not dependent on, say, the earning potential of a company or any asset, it is harder to put a value to the coin. The literature argues that the value of Bitcoin is based on the beliefs of investors, the reputation of the coin, its expected popularity, and endorsement by celebrities (Mattke et al., 2020; Delfabbro et al., 2021). A stream of literature pegs investing in Bitcoin akin to online gambling (Mills & Nowar, 2019).

To understand investment behavior, one of the most used theories is the regret theory (Loomes & Sugden, 1982). It posits that when a decision maker chooses among risky objects (e.g., gambles, investments), he/she is concerned not only about expected payoffs but also about the payoffs that may be foregone. This includes regret arising from not investing in a product (Tsiros, 2008).

According to extant literature, investor traits influence investment decisions (Sattar et al., 2020). Traits such as overconfidence (Nosić & Weber, 2010), the tendency to herd (Spyrou, 2013), and risk affinity (Ehm et al., 2014), among others, have been shown to impact investment decisions.

Further, it is the era of social media. Extant literature demonstrates the influence of social media on investment and trading behavior through various modes, including social trading platforms, bloggers, influencers, and social media contacts (Bizzi & Labban, 2019).

Specifically, studying the investment behavior in Bitcoin, the available literature on motivations to invest in Bitcoin can be classified into four blocks. The first block posits technical factors like anonymity, fast transfer, blockchain technology, and security as primary motivations behind Bitcoin investment (Folkinshteyn & Lennon, 2016). The second block focuses on the potential financial return-generating capacity of Bitcoin (Folkinshteyn & Lennon, 2016). The third block explores the influence of personal factors like risk attitude, technological curiosity, fear of missing out, and overconfidence (Delfabbro et al., 2021; Younus et al., 2022) among others in the stated context. The fourth block uses frameworks like the Technology Adoption Model (TAM) to document the interplay of the above factors. TAM (Davis, 1989) is one of the most widely used frameworks to understand technology adoption in several fields, including healthcare, eLearning, and online banking (Park, 2009). Notably, Folkinshteyn & Lennon (2016) used TAM to understand Bitcoin adoption.

The current work extends TAM to explore motivations behind the intention to invest in Bitcoin. The current study aims to explore the relevant motivations behind the intention to invest in Bitcoin from the viewpoint of regret aversion, investors' traits, profit expectancy and perceived ease of investing, and social media influence, along with their relative significance in the context of the Indian market. Notably, India is among the top five countries

on the Global Crypto Adoption Index<sup>1</sup> and the number of crypto investors in India is expected to increase many folds over the coming 3-5 years.<sup>2</sup>

Extant literature on cognitive psychology demonstrates that several decisions are based on minimizing anticipated regret (Schwartz et al., 2002). In the context of investment decisions, the regret theory posits that when a decision agent has to make an investment decision, apart from the expected payoffs, payoffs that may be foregone are also considered (Loomes & Sugden, 1982). Anticipated regret sentiment stemming from inaction to invest (Tsiros, 2008) in Bitcoin has been used in this research to understand if the same acts as a motivation to invest in Bitcoin. Mattke et al. (2021) also use a mixed method to demonstrate regret aversion stemming from inaction as one motivation for Bitcoin investment.

Overconfidence is the divergence between knowledge and perceived knowledge (Fischhoff et al., 1982), resulting in overestimating one's abilities. Extant literature has demonstrated the influence of overconfidence on investment decisions. For instance, higher levels of trading are associated with overconfidence (Barber & Odean, 2001); overconfident people are often seen to underestimate risk, leading to risky and less controlled behaviors (Nosić & Weber, 2010). Sudzina et al. (2023) demonstrate that early cryptocurrency adopters are overconfident. Syarkani & Tristanto (2022) demonstrate overconfidence to have (a) positive influence on attitude and (b) positive influence on investor decisions in the cryptocurrency market.

Herding refers to the tendency of investors to follow other investors or groups of investors rather than make their own investment decisions (Spyrou, 2013). Using empirical data, several researchers demonstrate that the cryptocurrency market is subject to herding behavior (da Gama Silva et al., 2019). Using survey data, Pham et al. (2021) demonstrate that herding positively influences attitudes and investors' intention to invest in cryptocurrencies. The findings of Gupta et al. (2021) and Younus et al. (2022) also highlight the significant and positive role of social influence in

the use of cryptocurrency. Bui (2022) found herding the most significant variable contributing to investors' intention to adopt Bitcoin.

Risk affinity can be defined as an individual's tendency to make risky investments (Allen et al., 2005). Ehm et al. (2014) demonstrate that an investor's investment choices are a function of his/her attitude toward risk, among other factors. Cryptocurrency is considered a high-risk investment class due to its high volatility and its nature as a speculative asset (Delfabbro et al., 2021). It has been observed that individuals with a higher-risk affinity are more willing to invest in cryptocurrency.

The researchers have identified profit (Böyükaslan & Ecer, 2021) and profit expectancy (Ali, 2011) as critical motives concerning investment. Profit expectancy is the quantum to which an individual believes in deriving financial benefits via investing. Investors perceive extreme volatility in the crypto market positively, unlike other traditional financial assets, considering that it offers an opportunity to attain greater profits (Nadler & Guo, 2020). Further, Glaser et al. (2014) indicated that profit expectancy is highly relevant in the context of Bitcoin investment. However, in a more recent study, Mattke et al. (2021) observed that profit expectancy is not necessary for bitcoin investing. The lack of consensus concerning the role of profit expectancy for bitcoin investment calls for further exploration of the stated association.

Perceived ease of Bitcoin acquisition is the extent to which a person assumes or perceives the mechanism of Bitcoin acquisition to be easy (Mattke et al., 2021). TAM assumes that perceived ease of use significantly impacts the user's attitude toward the new product or technology (Davis, 1989; Yoo et al., 2020). Researchers have widely employed TAM to explore an individual's behavioral intention to use cryptocurrency. Abramova & Bohme (2016) indicated that perceived ease of use influences the perceived benefits of Bitcoin. Perceived benefits also impact attitude (Yoo et al., 2020). The above discussion points to the significance of the ease of Bitcoin acquisition in relation to investors'

1 <https://blog.chainalysis.com/reports/2022-global-crypto-adoption-index/>(accessed on March 2023)

2 <https://www.livemint.com/market/cryptocurrency/understanding-the-current-state-of-crypto-assets-in-india-11680175236236.html>(accessed on March 2023)

attitudes toward Bitcoin. In more recent study by Gupta et al. (2021), perceived ease of use is observed as a relevant predictor of Bitcoin purchase intention. Mattke et al. (2021) also acknowledged the ease of bitcoin acquisition as a driver concerning investment decisions.

Bitcoin has emerged in the era of social media. Notably, social media remains crucial in developing perceptions about emergent things in society. One can witness a plethora of bloggers and influencers discussing Bitcoin on social media platforms. Studies have demonstrated that individuals mindlessly follow the recommendations of influencers (Pelster & Gonzalez, 2016). Several social media celebrities have made comments that have influenced the adoption of Bitcoin (Shalev & Morwitz, 2012). Further, contacts and networks developed via social media also influence trading behaviors (Mudholkar & Uttarwar, 2015). The continuous notification of peers trading in cryptos also accentuates the fear of missing out, which may have been a central reason for the adoption of Bitcoin by many individuals.

Attitude mirrors how individuals develop good or bad feelings concerning demonstrating a particular behavior (Ajzen, 1991). This implies that an individual may carry a positive or less positive attitude toward exhibiting a particular behavior. However, willingness to perform a task reflects the quantum of effort one takes in that regard (Ajzen, 1991). Notably, relevant current literature acknowledges that willingness to act is positively influenced by the attitude one carries concerning the task under consideration (Kim et al., 2013). Empirical research indicates that investors' attitudes considering various aspects of an asset remain instrumental in investment decisions (Ehm et al., 2014). Pham et al. (2021) observed that investors with a positive attitude toward cryptocurrency are more likely to invest in this asset.

The current study encapsulates the aspects discussed above by extending the TAM framework. The objective of this study is to (a) identify the relevant motivations behind the intention to invest in Bitcoin through the lens of regret, investor traits, profit expectancy and perceived ease of investing, and social media influence, and (b) study the interplay between such motivations along with their relative significance.

This study aims to explore the motivations behind the intention to invest in Bitcoin, along with the interplay between these motivations and their relative significance. Given the extent of literature review, this study is the first of its kind. The study that comes closest to the current study is that by Mattke et al. (2021) who form Bitcoin investor configurations based on the considered motivations. The current work's findings have important implications for various stakeholders, including financial market regulators, investor education agencies, payment service providers, and crypto exchanges.

Accordingly, the study postulates the following hypothesis based on a literature review:

*H1a: Investors' inaction regret aversion influences their attitude toward Bitcoin.*

*H1b: Investors' attitude toward Bitcoin moderates the relationship between their inaction regret aversion and behavioral intention to invest in Bitcoin.*

*H2a: Investors' overconfidence bias influences their attitude toward Bitcoin.*

*H2b: Investors' attitude toward Bitcoin moderates the relationship of their overconfidence bias and behavioral intention to invest in Bitcoin.*

*H3a: Investors' herding bias influences their attitude toward Bitcoin.*

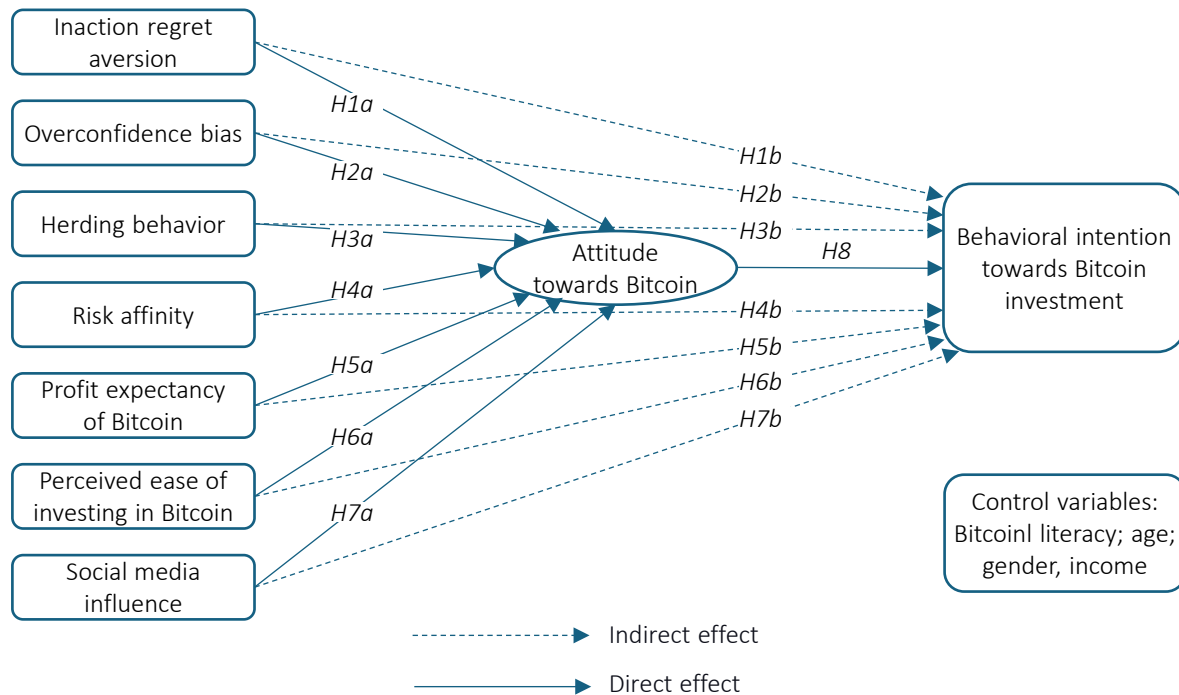
*H3b: Investors' attitude toward Bitcoin moderates the relationship of herding and behavioral intention to invest in Bitcoin.*

*H4a: Investors' risk affinity influences their attitude toward Bitcoin.*

*H4b: Investors' attitude toward Bitcoin moderates the relationship of their risk affinity and behavioral intention to invest in Bitcoin.*

*H5a: Investors' profit expectancy influences their attitude toward Bitcoin.*

*H5b: Investors' attitude toward Bitcoin moderates the relationship of their profit expectancy*



**Figure 1.** Hypothesized model

from Bitcoin and behavioral intention to invest in Bitcoin.

*H6a: Investors' perceived ease of Bitcoin acquisition influences their attitude toward Bitcoin.*

*H6b: Investors' attitude toward Bitcoin moderates the relationship of their perceived ease of Bitcoin acquisition and behavioral intention to invest in Bitcoin.*

*H7a: Social media influence on investors influences their attitude toward Bitcoin.*

*H7b: Investors' attitude toward Bitcoin moderates the relationship of social media influence on them and their behavioral intention to invest in Bitcoin.*

*H8: Investors' attitude toward Bitcoin has a positive influence on their behavioral intention to invest in Bitcoin.*

Based on the discussion, this study hypothesizes the following model:

## 2. METHODOLOGY

The present study has adapted different multi-item constructs to validate the hypothesized model empirically. The constructs were drawn from the literature and were appropriately contextualized.<sup>3</sup>

Respondents were pooled using purposive sampling.<sup>4</sup> The study utilized structured but self-administered questionnaires. Responses were gathered through online mode. The number of responses received was 468. Responses with unattended questions were discarded. Also, responses that had standard deviation values less than 0.5 were rejected. Further, outlier analysis was done using Mahalanobis distance method to eliminate multivariate outliers ( $p < 0.001$ ). This data cleaning process resulted in a final data set of 439 respondents.

Table 1 provides a comprehensive view of the demographic profile of respondents. Notably around 50% of respondents represented the age group of 20-25 years, around 29% of respondents were from the age group of 26-30 years, and approximately 21% respondents belonged to the age group

<sup>3</sup> The items used to measure the constructs employed in this study can be seen in Appendix 1.

<sup>4</sup> Individuals who have not yet invested in cryptocurrency were considered for this study.

of 30 years and above. The sample was skewed in terms of gender; male respondents were dominant. Around 11% of respondents have an annual family income of up to 5 lakhs, while around 34% are from the income group of 5-15 lakhs. And approximately 55% represented the other income groups, viz. 15-25 lakhs and more than 25 lakhs.

**Table 1.** Demographic profile of respondents

	Descriptor	Frequency	Percent
Age	20-25	221	50.34
	26-30	128	29.16
	31-35	27	6.15
	36-40	25	5.70
	41 and above	38	8.65
Gender	Female	162	36.90
	Male	277	63.10
Annual family income (in INR)	Less than 5 lakhs	50	11.39
	5-15 lakhs	151	34.4
	15-25	121	27.56
	More than 25 lakhs	117	26.65

Note:  $n = 439$ .

To explore the impact of selected variables in the discussed context, partial least squares-based structural equation modeling (PLS-SEM) was applied. PLS-SEM typically yields robust results even in small samples and non-normal data distribution vis-à-vis covariance-based SEM (Chin *et al.*, 2003). The constructs' validity and reliability were ascertained before hypotheses testing. The model was found to be a good fit and quality, as the values of model fit and quality indices were in the acceptable ranges.

The validity of all constructs was ascertained. As factor loadings of all the constructs were more than 0.5, the constructs were found valid (Hair *et al.*, 2009). Also, the CR (composite reliability) and AVE (average variance extracted) values were more than 0.7 and 0.5, respectively (Hair *et al.*, 2009). Thus, the convergent validity of each construct is established. The discriminant validity of all the constructs is also ascertained (Hair *et al.*, 2009) and is presented in Table 1. The composite reliability (CR) value and Cronbach's alpha coefficients of all constructs were found to be close to or greater than the critical value of 0.7 (Hair *et al.*, 2009), which established the reliability of each construct<sup>5</sup>.

Full collinearity VIFs were calculated for all constructs to check common method bias (CMB), as it might lead to artificial covariance between the items. The value remains below that critical value of 3 for each construct (Table 1). This implies that the model had no multicollinearity. Additionally, a one-factor test of Harman was carried out, which indicates the absence of CMB as the single factor extracted out of an exploratory factor analysis encompassing all study variables, accounted for under 50% of the total variance (Podsakoff & Organ, 1986). To further ensure the absence of CMB, a precautionary partial Correlation Procedure, which included the use of the general factor covariate technique (Podsakoff & Todor, 1985), was used. This analysis revealed no significant change in the  $R^2$  value of the endogenous construct before and after adding the general factor, providing further evidence of no substantial CMB in the study.

The robustness of the model was also tested by checking the impact of control variables on any of the endogenous variables. Bitcoin literacy, age, gender, and income were control variables, while behavioral intention (BI) was an endogenous variable. The impact of all the control variables viz. Bitcoin literacy ( $\beta = 0.04$ ,  $p = 0.07$ ), age ( $\beta = -0.02$ ,  $p = 0.18$ ), gender ( $\beta = -0.00$ ,  $p = 0.48$ ), and income ( $\beta = 0.04$ ,  $p = .25$ ) and their effect size ( $f^2$ ) on BI, were found insignificant. The results showed the absence of endogeneity to a certain extent (Hair *et al.*, 2009), which establishes the robustness of the model.

### 3. RESULTS

Table 2 presents the results of path analysis. The direct effect of inaction regret aversion (IRA) ( $\beta = 0.23$ ,  $p < 0.01$ ), risk affinity (RA) ( $\beta = 0.08$ ,  $p < 0.05$ ), profit expectancy (PRE) ( $\beta = 0.38$ ,  $p < 0.001$ ), perceived ease of investing in Bitcoins (PEIB) ( $\beta = 0.11$ ,  $p < 0.05$ ) and social media influence (SMI) ( $\beta = 0.31$ ,  $p < 0.05$ ), on attitude toward Bitcoin (ATTD) was observed as significant. Notably, PRE emerges as the most significant variable followed by SMI to influence investor's attitude towards Bitcoin investing. And risk affinity is observed as to have the smallest influence in the stated context.

<sup>5</sup> The detailed results of validity and reliability tests are available on demand.

The direct effect of overconfidence bias (OCB) ( $\beta = -0.03$ ,  $p = 0.17$ ) and herding bias (HB) ( $\beta = 0.01$ ,  $p = .42$ ) was not found significant. These findings are inconsistent with Sudzina et al. (2023) who observed OCB to remain relevant for Bitcoin investing, and with Pham et al. (2021) who found HB to exert an influence on attitude toward investing in Bitcoin. The value of the Stone-Geisser  $Q^2$  coefficient for ATTD stands at 71%, which indicates that exogenous variables, i.e., IRA, RA, PRE, PEIB, and SMI, could have 71% predictability of endogenous variables, i.e., ATTD. The  $Q^2$  value and the corresponding  $R^2$  value hinted at predictive accuracy (Stone, 1974). The effect size (Cohen's  $f^2$ ) of IRA, RA, PRE, PEIB, and SMI on ATTD are 0.16, 0.02, 0.29, 0.05, and 0.23, respectively, which suggest that the effect was medium to large. The effect size indicates small (0.02), medium (0.15), or large (0.35) effects by the respective path coefficients (Cohen, 1988). Thus, hypotheses *H1a*, *H4a*, *H5a*, *H6a*, and *H7a* are supported, while hypotheses *H2a* and *H3a* are not supported.

The direct effect of ATTD ( $\beta = 0.63$ ,  $p < 0.01$ ) on behavioral intention to invest in Bitcoin (BI) is significant (Table 2), indicating that positive attitude toward cryptocurrency would lead to stronger intention to invest in it. Concerning this association, the  $Q^2$  value remains 73%, while the corresponding  $R^2$

value is 76%. The effect size (Cohen's  $f^2$ ) of 0.53 suggests that the effect of attitude on behavioral intention in the discussed context remains large.

Notably, no significant effect of Bitcoin literacy ( $\beta = 0.04$ ,  $p = 0.07$ ), age ( $\beta = -0.02$ ,  $p = 0.18$ ), gender ( $\beta = -0.00$ ,  $p = 0.48$ ), and income ( $\beta = 0.04$ ,  $p = .25$ ) is found on behavioral intentions to invest in Bitcoin.

A mediation analysis was also conducted to explore whether the stated variables indirectly affect behavioral intentions via attitude. Table 3 provides the results of mediation analysis. Notably, the paths between OCB and AATD and HB and ATTD remained statistically insignificant. Hence, mediation analysis becomes irrelevant. Further, the indirect effect of IRA, PRE, PEIB, and SMI on behavioral intention was observed via ATTD, where variance accounted for (VAF) stood between 60% and 80% (Table 3). The extent of mediation is explained by VAF values (VAF < 20%: no mediation; VAF = 20-80%: partial mediation; and VAF > 80%: full mediation; Hair et al., 2014). Thus, hypotheses *H1b*, *H4b*, *H5b*, *H6b* and *H7b* are supported. These results reiterate the relevance of ATTD concerning the behavioral intention of potential investors. Table 4 presents the summary of hypotheses testing outcomes.

**Table 2.** Path estimates

Variables	DVs		
	Attitude toward Bitcoin (ATTD)	Behavioral intention toward Bitcoin investment (BI)	
IVs	Inaction regret aversion (IRA)	0.23* (effect size = 0.16)	0.15* (effect size = 0.10)
	Overconfidence bias (OCB)	-0.03***	0.02***
	Herding bias (HB)	0.01***	0.01***
	Risk affinity (RA)	0.08** (effect size = 0.02)	0.02***
	Profit expectancy (PRE)	0.38* (effect size = 0.29)	0.05***
	Perceived ease of investing in Bitcoin (PEIB)	0.11* (effect size = 0.05)	0.05***
	Attitude (ATTD)	-	0.63* (effect size = 0.53)
	Social media influence (SMI)	0.31* (effect size = 0.23)	0.10** (effect size = 0.07)
Control variables	Bitcoin literacy	-	0.04***
	Age	-	-0.02***
	Gender	-	-0.01***
	Income	-	0.04***
$R^2$	0.76	0.76	
Adjusted $R^2$	0.75	0.75	
$Q^2$	0.71	0.73	

Note: \* significant ( $p < 0.01$ ); \*\* significant ( $p < 0.05$ ); \*\*\* non-significant.



**Table 3.** Mediation analysis

Path	Indirect effect	P-value	Effect size (indirect)	Total effect	P-value	VAF	Mediation
IRA → ATTD → BI	0.148	<0.01	0.10	0.23	<0.01	0.60	partial
OCB → ATTD → BI	-0.020	0.166	0.004	-0.03	0.168	–	no
HB → ATTD → BI	0.004	0.422	0.001	0.01	0.422	–	no
RA → ATTD → BI	0.053	<0.05	0.02	0.08	<0.05	0.66	partial
PRE → ATTD → BI	0.243	<0.01	0.165	0.38	<0.01	0.64	partial
PEIB → ATTD → BI	0.068	<0.01	0.03	0.11	<0.01	0.62	partial
SMI → ATTD → BI	0.197	<0.01	0.131	0.31	<0.01	0.64	partial

**Table 4.** Hypotheses testing summary

Hypothesis	Hypothesized Path	Statement	Result
H1a	IRA → ATTD	Investors' inaction and regret aversion influence their attitude toward Bitcoin	Supported
H1b	IRA → ATTD → BI	Investors' attitude toward Bitcoin moderates the relationship between their inaction regret aversion and behavioral intention to invest in Bitcoin	Supported
H2a	OCB → ATTD	Investors' overconfidence bias influences their attitude toward Bitcoin	Not supported
H2b	OCB → ATTD → BI	Investors' attitude toward Bitcoin moderates the relationship of their overconfidence bias and behavioral intention to invest in Bitcoin	Not supported
H3a	HB → ATTD	Investors' herding bias influences their attitude toward Bitcoin	Not supported
H3b	HB → ATTD → BI	Investors' attitude toward Bitcoin moderates the relationship of herding and behavioral intention to invest in Bitcoin	Not supported
H4a	RA → ATTD	Investors' risk affinity influences their attitude toward Bitcoin	Supported
H4b	RA → ATTD → BI	Investors' attitude toward Bitcoin moderates the relationship of their risk affinity and behavioral intention to invest in Bitcoin	Supported
H5a	PRE → ATTD	Investors' profit expectancy influences their attitude toward Bitcoin	Supported
H5b	PRE → ATTD → BI	Investors' attitude toward Bitcoin moderates the relationship of their profit expectancy from Bitcoin and behavioral intention to invest in Bitcoin	Supported
H6a	PEIB → ATTD	Investors' perceived ease of Bitcoin acquisition influences their attitude toward Bitcoin	Supported
H6b	PEIB → ATTD → BI	Investors' attitude toward Bitcoin moderates the relationship of their perceived ease of Bitcoin acquisition and behavioral intention to invest in Bitcoin	Supported
H7a	SMI → ATTD	Social media influence on investors influences their attitude toward Bitcoin	Supported
H7b	SMI → ATTD → BI	Investors' attitude toward Bitcoin moderates the relationship of social media influence on them and their behavioral intention to invest in Bitcoin	Supported
H8	IRA → BI	Investors' attitude toward Bitcoin has a positive influence on their behavioral intention to invest in Bitcoin	Supported

## 4. DISCUSSION

The significant direct effect of inaction regret aversion, risk affinity, profit expectancy, perceived ease of investing in Bitcoins and social media influence on attitude toward Bitcoin has important implications across various stakeholders. The stated findings concerning the relevance of inaction regret aversion and social media influence are consistent with the findings of Mattke et al. (2021)

and Mudholkar and Uttarwar (2015), respectively. Notably, information regarding Bitcoin's financial performance and posts from various celebrity investors are likely to create a buzz on social media, which may lead to a feeling of missing out on the opportunity to make profits by missing the bus<sup>6</sup>. Hence, Bitcoin asset management companies and crypto exchanges can leverage these findings to attract new investors by setting up the appropriate communication strategies to attract new investors.

6 <https://www.cnn.com/2021/01/23/why-people-invest-in-bitcoin.html>(as accessed in March 2023)

The results regarding the influence of perceived ease of investing in Bitcoin converge with the observations Yoo et al. (2020) who identify ease of use as a key variable in shaping users' attitudes toward and adoption of new technologies, including Bitcoin. These findings suggest that service providers should invest in developing appropriate technology to make mechanism of Bitcoin investment easier. Current results regarding the significance of profit expectancy concerning Bitcoin investment align with Glaser et al. (2014). They found that the exponential gains attract potential investors to consider investing in it. However, Mattke et al. (2021) indicated that the PRE of Bitcoin is not a significant motive for Bitcoin investors. Contrary to Mattke et al. (2021), the current analysis indicates that profit expectancy is most influential in shaping investors' attitudes. This implies that individuals are possibly considering Bitcoin as a financial asset (Choudhary et al., 2024), so profit generation is becoming increasingly important. This also suggests the relevance of higher risk affinity of Bitcoin investors. Such behavior con-

verges with the conduct demonstrated by investors in general for other investment assets.

Current findings around direct effect of overconfidence bias and herding bias on attitude towards investing in Bitcoin are inconsistent with Sudzina et al. (2023) who observed overconfidence bias to remain relevant for Bitcoin investing; and with Pham et al. (2021) who found herding bias to exert an influence on attitude toward investing in Bitcoin.

The direct effect of attitude towards investing in Bitcoin on behavioral intention to invest in Bitcoin is significant. This is consistent with the findings of Pham et al. (2021) who also reported that a positive attitude toward cryptocurrency would lead to stronger intention to invest in it. This indicates that information concerning various other variables that may set the attitude of investors positive toward Bitcoin becomes significant for making them finally invest in this asset. Results of mediation analysis also emphasize on the significance of attitude towards investing in Bitcoin in the stated context.

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## CONCLUSION AND IMPLICATIONS

Present study aims to understand the motivations behind individuals' intentions to invest in Bitcoin. Current work takes support of regret theory and TAM, psychological investors' traits, and social media influence. Consequently, the current work explores inaction regret aversion, overconfidence bias, herding bias, risk affinity, perceived ease of investing in Bitcoin, profit expectancy, attitude toward Bitcoin, and social media influence to predict the behavioral intention to invest in Bitcoin.

The current study's findings reveal that risk affinity, feelings of anticipated regret, profit expectancy, perceived ease of bitcoin acquisition, and social media influence are significant predictors of attitude toward Bitcoin. Further, attitude toward Bitcoin is a significant determinant of behavioral intention to invest in Bitcoin. Notably, overconfidence bias and herding bias are observed as insignificant in the above-mentioned context. Current study also indicates that attitude towards investing in Bitcoin partially mediates the relationship between inaction regret aversion and behavioral intentions to invest in Bitcoin, risk affinity and behavioral intentions to invest in Bitcoin, profit expectancy and behavioral intentions to invest in Bitcoin, perceived ease of investing in Bitcoin and behavioral intentions to invest in Bitcoin, and social media influence and behavioral intentions to invest in Bitcoin.

Such findings have several practical implications. Firstly, the study findings indicate the growing acceptance of Bitcoin as an asset considered by investors to park their funds. Second, study's findings highlight the relative significance of factors influencing the intention to invest in Bitcoin. Such findings can be used by cryptocurrency wallet providers, payment service providers, and Bitcoin exchanges to better understand their target audience. Such an understanding can aid the service providers in designing their marketing and advertising activities accordingly and in developing the appropriate technological framework to ensure the continuity of growing popularity of Bitcoin. finally, regulatory bodies and

investor education agencies can also use the findings to make potential Bitcoin investors aware of the factors that play a role in their intention to invest in Bitcoin. Being cognizant of such factors will enable investors to make informed decisions.

While the paper examines intentions to invest in Bitcoin from a holistic view, this study has its own set of limitations. Approximately 80 percent of our respondents belong to the age group of 20-30 years. This is in line with extant literature, which demonstrates that most individual crypto investors belong to this age group. Future research can be taken to include a larger sample for age groups beyond 30 to explore if the motivations to invest in Bitcoin vary across age groups. Further, current study focuses on individuals who have not invested in Bitcoin yet. Hence, it can be extended to understand the intention to reinvest in Bitcoin. This will help uncover the difference between the behavior of both kinds of investors. Furthermore, more factors can be explored to explain the intention to invest in Bitcoin.

## AUTHOR CONTRIBUTIONS

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## APPENDIX A

**Table A1. Constructs**

<b>Constructs</b>
<b>Inaction regret aversion</b> (Inman & Zeelenberg, 2002; Tsiros, 2008)
IRA1. If I do not invest in Bitcoin now, I will it regret later
IRA2. On a scale of 1 to 5, how much will you regret your decision if you do not invest in bitcoin now? (1 = not regret at all; 5 = very much regret)
IRA3. If I could change my decision of not investing in Bitcoins, I would have changed it?
IRA4. On a scale of 1 to 5, How much happier would you have been if you had invested in Bitcoins (1 = not much happier; 5 = very much happier)?
<b>Overconfidence bias</b> (Baker et al., 2019; Glaser & Weber, 2007; Prosad et al., 2015)
OCB1. I cannot predict the future prices of my investments better than others
OCB2. I always feel optimistic about the future returns of my investments
OCB3. I am confident of my ability to make investment decisions better than others
OCB4. I have complete knowledge of various types of investments
<b>Herding bias</b> (Baker et al., 2019)
HB1. I rarely consult others before taking investing decision
HB2. Other investors' decisions of buying and selling affect my investment decisions
HB3. I usually react quickly to the changes in other investors' decisions and follow their reactions
HB4. I consult others (family, friends, or colleagues) before deciding to invest
HB5. I follow social blogs/ forums before making a purchase/sale of an asset
<b>Risk affinity</b> (Allen et al., 2005)
RA1. I am willing to take risks when choosing an investment
RA2. I prefer a high-risk investment with a large profit over an investment with low risk and medium profit
RA3. I prefer investments that have high risks
RA4. Risk is a normal part of an investment
<b>Profit expectancy</b> (Ali, 2011)
PRE1. Bitcoin is financially sound.
PRE2. Investing in bitcoin seems to be able to generate high returns.
PRE3. I believe bitcoin will perform satisfactorily in the future
PRE4. Bitcoin has sufficient resources to grow in the future
PRE5. I think investing in bitcoin is highly rewarding
<b>Perceived ease of investing in Bitcoin</b> (Davis, 1989; Malhotra & Galletta, 2005; Venkatesh & Davis, 2000; Venkatesh et al., 2003)
PEIB1. I believe that it is easy to invest in bitcoins
PEIB2. I believe that investing in bitcoins is clear and understandable
PEIB3. I believe that it is easy for me to become skillful at investing in bitcoins
PEIB4. I believe that investing in bitcoins would be effortless in terms of experience, use, etc.
PEIB5. I believe that it is easy to learn to invest in bitcoins
<b>Attitude</b> (Davis, 1989; Malhotra & Galletta, 2005; Venkatesh et al., 2003)
ATTD1. I (would) like to invest in Bitcoin
ATTD2. I think investing in Bitcoin is a good idea
ATTD3. I am positive toward investing in Bitcoin
ATTD4. Investing in Bitcoin is appealing
<b>Social media influence</b> (Wokke & Rodenrijs, 2018)
SMI1. Social media makes me believe that I would want to invest in Bitcoin because I agree with the values I associate with it
SMI2. Social media (can) positively change(d) my opinion about investing in Bitcoin
SMI3. My opinion about investing in Bitcoin is susceptible to friends/others beliefs expressed on social media
SMI4. Social media convinces me that investing in Bitcoin is something be proud of
SMI5. Social media pressures me to invest in Bitcoin
<b>Behavioral intention</b> (Venkatesh & Davis, 2000; Venkatesh et al., 2003)
B1. I intend to invest in Bitcoin
B2. I plan to invest in Bitcoin
<b>Bitcoin literacy</b> (Banner et al., 2019)
BL1. Bitcoin allows for direct transactions between two parties without a third party involved
BL2. All Bitcoin transactions are recorded on a distributed ledger that is publicly accessible
BL3. The total supply of Bitcoin is fixed
BL4. Bitcoin holdings are insured by the government
BL5. Bitcoin transfers are irreversible
BL6. All Bitcoin transactions go through a central repository

## APPENDIX B

**Table B1.** Validity and reliability statistics

	CR	Cronbach's $\alpha$	AVE	Full collinearity VIFs	Correlations among latent variables with $\sqrt{\text{AVEs}}$ (*shown on diagonal)									
					IRA	OCB	HB	RA	PRE	PEIB	ATTD	SMI	BL	
IRA	0.88	0.80	0.63	2.09	0.79*									
OCB	0.82	0.68	0.61	1.34	-0.08	0.78*								
HB	0.82	0.71	0.54	1.32	0.38	0.05	0.73*							
RA	0.87	0.77	0.69	1.34	0.18	0.33	0.19	0.83*						
PRE	0.88	0.88	0.68	2.59	0.59	0	0.34	0.22	0.82*					
PEIB	0.82	0.82	0.59	1.42	0.27	0.25	0.10	0.32	0.33	0.77*				
ATTD	0.92	0.92	0.80	2.03	0.57	-0.06	0.35	0.17	0.55	0.38	0.89*			
SMI	0.89	0.88	0.69	2.27	0.56	-0.06	0.37	0.21	0.52	0.31	0.51	0.83*		
BI	0.93	0.93	0.93	2.69	0.55	-0.10	0.34	0.19	0.57	0.28	0.53	0.56	0.97*	