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Investor sentiment toward the cryptocurrency market in Vietnam: Influencing factors and practical recommendations

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ABSTRACT

This study investigates the factors influencing investor sentiment in Vietnam's cryptocurrency market by integrating the Theory of Planned Behavior (TPB), behavioral finance, and the attention-based view. Using a quantitative approach, data were collected from 437 cryptocurrency investors through a structured questionnaire and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 3. The findings show that subjective norm, perceived behavioral control, trust, herding behavior, and investor attention positively influence investor sentiment, whereas perceived risk has a significant negative effect. However, attitude toward cryptocurrency does not have a statistically significant direct effect. Among all the determinants, investor attention emerges as the strongest predictor of investor sentiment. In addition, investor attention significantly mediates the relationships between all antecedent factors and investor sentiment, highlighting its role as a key cognitive mechanism through which psychological and behavioral factors shape market perceptions. The study extends TPB to the context of cryptocurrency markets and contributes to the literature by emphasizing the importance of behavioral biases and attention-driven processes in the formation of investor sentiment. From a practical perspective, the findings suggest that regulators and cryptocurrency platforms should improve information transparency, strengthen investor education, and enhance trust-building mechanisms to reduce excessive fluctuations in investor sentiment. Monitoring information flows and social influence is also essential for understanding and managing sentiment-driven behavior in emerging cryptocurrency markets.

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1. Introduction

The rapid advancement of digital technologies has significantly transformed the global financial landscape, giving rise to new forms of digital assets and alternative investment channels. Among these, cryptocurrency has emerged as one of the most prominent innovations, operating on decentralized blockchain technology and functioning independently of central authorities (Alzahrani and Daim, 2019). Over the past decade, the cryptocurrency market has evolved from a niche technological phenomenon into a major financial asset class, attracting substantial participation from both institutional and retail investors. Prior studies highlight that cryptocurrencies are now among the most actively traded financial assets globally, with market dynamics increasingly driven by speculative behavior, information flows, and investor expectations rather than traditional fundamental valuation (Bagh et al., 2025). This transformation underscores the growing importance of understanding behavioral factors, particularly investor sentiment, in explaining market movements.

The significance of the cryptocurrency market is especially evident in emerging economies, where retail participation is high and financial innovation often outpaces regulatory development. Vietnam represents a particularly compelling case. Recent reports by Chainalysis (2025) indicated that Vietnam consistently ranks 7th in the number of crypto asset holders globally, with approximately 17 million users having owned or used cryptocurrencies during

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the period 2024–2025. In addition, total cryptocurrency transaction value in Vietnam is estimated to have reached USD 220–230 billion between mid-2024 and mid-2025, reflecting substantial growth and active market participation (Chainalysis, 2025). The market is predominantly driven by retail investors, particularly younger individuals aged between 18 and 40, who are highly engaged in digital platforms and social media. However, despite this rapid expansion, the regulatory framework remains incomplete, as cryptocurrencies are not officially recognized as legal tender and trading activities largely occur on offshore platforms. This combination of high participation, strong speculative behavior, and regulatory uncertainty makes Vietnam an ideal context for examining the role of psychological and behavioral factors in shaping investor behavior.

Within this environment, investor sentiment has been widely recognized as a critical determinant of cryptocurrency market dynamics. A growing body of literature demonstrates that sentiment, commonly proxied by social media indicators, search trends, or composite indices, plays a significant role in explaining cryptocurrency returns and volatility (Gunay et al., 2025; Han, 2025; Naeem et al., 2021). Unlike traditional financial markets, where asset prices are more closely linked to fundamental values, cryptocurrency prices are highly sensitive to expectations, collective beliefs, and rapid information diffusion. However, despite extensive research on the predictive role of sentiment, existing studies predominantly focus on its consequences rather than its formation. In particular, limited attention has been given to how cognitive evaluations, social influences, and behavioral biases interact to shape investor sentiment at the individual level. Moreover, most prior studies rely on external proxies and are conducted in developed or global contexts, leaving emerging markets such as Vietnam, which is characterized by high adoption, strong retail participation, and regulatory uncertainty. To address these gaps, this study develops an integrated theoretical framework by combining the Theory of Planned Behavior (TPB) (Ajzen, 1991), behavioral finance grounded in Prospect Theory (Kahneman and Tversky, 1979), and the attention-based view of investor behavior (Barber and Odean, 2008). While TPB explains investor evaluations through attitude, subjective norm, and perceived behavioral control, it primarily focuses on behavioral intention and does not adequately account for the psychological biases that dominate highly uncertain financial markets. Behavioral finance complements TPB by incorporating non-rational determinants such as perceived risk, trust, and herding behavior, which are particularly salient in cryptocurrency investment. Building on these perspectives, the attention-based view explains how investors selectively allocate cognitive resources to market information, thereby transforming cognitive evaluations and behavioral biases into investor sentiment. Accordingly, the proposed framework conceptualizes investor sentiment as the outcome of interactions among rational evaluations, behavioral biases, and attention-driven information processing rather than as a direct consequence of any single theoretical perspective. This study makes three theoretical contributions to the literature. Firstly, it extends the application of TPB beyond its traditional focus on behavioral intention by explaining the psychological formation of investor sentiment in cryptocurrency markets. Secondly, it integrates TPB and behavioral finance into a unified framework, demonstrating that investor sentiment is jointly shaped by rational cognitive evaluations and behavioral biases rather than either perspective alone. Thirdly, it advances the attention-based view by identifying investor attention as a key cognitive mechanism through which both TPB-related factors and behavioral determinants influence investor sentiment. By positioning investor attention as a mediator, this study provides a more comprehensive explanation of how investor sentiment is formed in highly information-intensive and speculative markets such as cryptocurrencies. The study has five main parts, including (1) introduction; (2) literature review and hypothesis development; (3) methodology; (4) results and discussion; and (5) conclusions.

2. Literature review and hypothesis development

2.1. Cryptocurrency market overview

Cryptocurrency is a digital asset based on blockchain technology that operates independently of governments and central banks. Unlike fiat currencies, it is neither issued nor backed by sovereign authorities. Prior studies describe cryptocurrencies as decentralized currencies offering advantages such as fast transactions, low costs, privacy, and investment potential (Alzahrani and Daim, 2019). Over time, cryptocurrency has evolved from a technological innovation into a major financial asset class. Earlier research reports more than 2,000 listed cryptocurrencies and highlights blockchain's transformative role in financial systems (Arias-Oliva et al., 2019). More recent studies recognize cryptocurrencies as one of the most actively traded global asset classes (Bagh et al., 2025). A key feature of this market is high volatility and strong sensitivity to investor sentiment. Social media activity, search trends, and news flow significantly influence returns and short-term price movements, making market dynamics highly dependent on expectations, herding behavior, and information diffusion. In Vietnam, cryptocurrency adoption is among the highest globally, with about 17–21% of the population (around 17 million users) having used cryptocurrencies in 2024–2025. Transaction volume reached approximately USD 220–230 billion between mid-2024 and mid-2025. Despite strong participation, especially among investors aged 18–40, the regulatory framework remains incomplete, as cryptocurrencies are not

legal tender and trading largely occurs on offshore platforms. Therefore, behavioral factors such as trust, perceived usefulness, perceived behavioral control, financial literacy, herding behavior, and legal conditions are key determinants of investment decisions (Hasan et al., 2024). Overall, sustainable development of the market depends on improved trust, transparency, financial literacy, and regulation, despite ongoing risks of volatility, fraud, and manipulation (Alzahrani and Daim, 2019).

2.2. Investor sentiment

Investor sentiment in the cryptocurrency market has attracted substantial scholarly attention as a critical determinant of market dynamics, particularly given the speculative and information-driven nature of digital assets (Metawa et al., 2019). A growing body of empirical research demonstrates that sentiment, often proxied by social media indices, composite indicators, or market-based measures, plays a significant role in shaping cryptocurrency price movements and volatility. For instance, studies employing composite sentiment indices find that sentiment risk is priced in the cross-section of cryptocurrency returns, with varying risk premiums across assets exhibiting different sensitivities to sentiment changes. Intermediate sentiment risk, in particular, is associated with higher risk-adjusted returns compared to low or high sentiment risk, highlighting the nuanced role of sentiment in return formation (Han, 2025). Research on online sentiment proxies, such as social media-based Happiness and FEARS indices, suggests that sentiment derived from digital platforms can significantly predict returns for major cryptocurrencies, with social media sentiment often exhibiting stronger predictive power than traditional macroeconomic indicators (Naeem et al., 2021). Additionally, time-frequency analyses reveal that causality and co-movement between sentiment and returns may vary across different market conditions, indicating that the dynamic interplay between sentiment and price behavior is complex and regime-dependent (Gunay et al., 2025). Other studies employ mixed sentiment indices incorporating technical market signals, demonstrating that investor sentiment can be a reliable predictor of market returns when captured through multidimensional measures (Bagh et al., 2025).

From a conceptual standpoint, investor sentiment is broadly defined as the collective psychological orientation of market participants, encompassing optimism, pessimism, fear, and uncertainty about future price movements. Unlike fundamental valuation metrics, sentiment reflects a mixture of affective states and cognitive evaluations that manifest through observable actions such as trading patterns, search behavior, and online discourse, where information diffusion is rapid and often unfiltered. These psychological and behavioral components are widely recognized in behavioral finance and are essential for understanding the non-fundamental drivers of asset prices (Prasad et al., 2023). Beyond its consequences for market performance, investor sentiment is itself a multidimensional psychological construct that is shaped by a combination of cognitive, social, and behavioral factors. Existing theoretical perspectives suggest that investors' evaluations of financial assets, perceived social influence, confidence in their investment capability, perceptions of market risk, trust in market institutions, and susceptibility to herding behavior all contribute to the formation of market sentiment. Furthermore, because cryptocurrency markets are characterized by continuous information flows and limited fundamental valuation anchors, investors' attention to market information becomes a critical cognitive process through which these antecedents influence sentiment. Therefore, understanding the formation of investor sentiment requires examining both its psychological determinants and the information-processing mechanisms that connect these determinants with investors' market perceptions.

Despite the growing literature on cryptocurrency investor sentiment, several important gaps remain. Firstly, prior studies predominantly investigate the consequences of investor sentiment for market outcomes while providing limited understanding of its underlying psychological and behavioral determinants. Secondly, existing research largely relies on external sentiment proxies, such as social media indicators, search volume, or composite market indices, with relatively little attention paid to investors' own cognitive evaluations and subjective perceptions collected through survey-based approaches. Thirdly, although TPB, behavioral finance, and attention-based theories have each been applied separately in studies of cryptocurrency investment, few studies have integrated these complementary perspectives into a unified framework to explain how investor sentiment is formed. In particular, the mediating role of investor attention as a cognitive mechanism linking psychological evaluations and behavioral biases to investor sentiment remains largely unexplored. These gaps are especially evident in emerging cryptocurrency markets such as Vietnam, where retail participation is high, information environments are rapidly evolving, and regulatory uncertainty remains substantial.

2.3. Theoretical foundations

This study is grounded in three complementary perspectives: the Theory of Planned Behavior (TPB) (Ajzen, 1991), behavioral finance based on prospect theory (Kahneman and Tversky, 1979), and the attention-based view of investor behavior (Barber and Odean, 2008). Their integration is particularly relevant in cryptocurrency markets, which are characterized by high volatility, limited fundamental valuation, and strong dependence on information flows and collective psychology. Prior research shows that investor behavior in such environments

is shaped by both cognitive evaluations and behavioral biases (Cuong et al., 2025; Pham et al., 2021). TPB explains behavior through attitude, subjective norm, and perceived behavioral control, capturing individual evaluation, social influence, and perceived capability. In cryptocurrency contexts, these constructs significantly influence investment-related perceptions, although their effects may vary across market conditions and information environments (Cuong et al., 2025; Pilatin and Dilek, 2024). However, TPB alone is insufficient to explain irrational decision-making in highly uncertain markets. Behavioral finance addresses this limitation by emphasizing biases such as loss aversion, overconfidence, and herding, which are especially prevalent in cryptocurrency markets due to uncertainty and fragmented information (Boxer and Thompson, 2020; Kumar Kulbhaskar and Subramaniam, 2025; Pham et al., 2021). Building on this, the attention-based view explains how cognitive and behavioral factors are translated into investor sentiment through selective information processing. In highly information-intensive cryptocurrency markets, investor attention determines which signals are processed and how they influence psychological outcomes (Barber and Odean, 2008). Overall, the framework conceptualizes investor sentiment as the outcome of cognitive evaluation, behavioral biases, and attention-driven information processing, providing a comprehensive basis for analyzing investor behavior in emerging markets such as Vietnam.

2.4. Hypothesis development

Investor sentiment in cryptocurrency markets reflects a composite psychological state shaped by expectations, optimism/pessimism, and behavioral orientations toward the market (Metawa et al., 2019). Drawing on the TPB by Ajzen (1991), three core factors as attitude toward the behavior, subjective norm, and perceived behavioral control are particularly relevant for explaining variations in investor sentiment.

Attitude captures the investor's positive or negative evaluation of cryptocurrency investment. Individuals with favorable attitudes are more likely to form optimistic sentiment, as prior studies in cryptocurrency contexts suggest that perceived benefits, including technological innovation, high returns, and decentralization, strengthen engagement and positive perceptions (Pham et al., 2021; Pilatin and Dilek, 2024). Subjective norm reflects the perceived social pressure to engage in cryptocurrency investment. In highly social markets like crypto, investors' perceptions are strongly influenced by peers, online communities, and social media, which can amplify collective sentiment (Boxer and Thompson, 2020; Pham et al., 2021). When investors perceive supportive social cues, they are more likely to hold positive sentiment. Perceived behavioral control represents investors' confidence in their ability to participate in cryptocurrency markets, including their access to resources, knowledge, and skills. Higher perceived behavioral control reduces uncertainty, enhances perceived competence, and fosters favorable sentiment toward investment decisions (Cuong et al., 2025; Pilatin and Dilek, 2024). It can be seen that these three TPB-based constructs provide a theoretically grounded framework for explaining direct effects on investor sentiment. They capture the rational and social-cognitive mechanisms through which individuals evaluate and respond psychologically to the cryptocurrency market. Based on these arguments, the following hypotheses are proposed:

H1: Attitude toward cryptocurrency positively influences investor sentiment.
H2: Subjective norm positively influences investor sentiment.
H3: Perceived behavioral control positively influences investor sentiment.

Behavioral factors play a critical role in shaping investor sentiment in cryptocurrency markets, where uncertainty is high, fundamental valuation anchors are limited, and information diffusion is rapid. Based on the behavioral finance perspective (Kahneman and Tversky, 1979) and subsequent research on cognitive biases and social behavior in finance, three key behavioral determinants are particularly influential including perceived risk, trust, and herding behavior.

Perceived risk reflects the individual's assessment of potential losses or uncertainties associated with cryptocurrency investment. High perceived risk tends to trigger caution and negative sentiment, whereas lower perceived risk fosters optimism. Empirical studies consistently demonstrate the role of risk perception in shaping investor sentiment and investment intentions. For instance, Pham et al. (2021) and Cuong et al. (2025) showed that perceived financial and market risk significantly influence investors' psychological responses to cryptocurrencies. Trust captures the investor's confidence in the market, platforms, and ecosystem participants. In unregulated or partially regulated markets like Vietnam, trust is a crucial determinant of sentiment. Investors who perceive higher trust in exchanges, transaction security, and transparency tend to exhibit more positive sentiment. Empirical evidence supports this argument, as Hasan et al. (2024) and Cuong et al. (2025) found trust to be a significant positive predictor of investor confidence and sentiment in cryptocurrency markets. Herding behavior refers to the tendency of investors to imitate the actions of others, especially in uncertain environments (Boxer and Thompson, 2020). Herding can amplify collective sentiment, which produces strong optimism during bullish phases and heightened pessimism during bearish phases. Empirical studies confirm the prevalence of herding in crypto markets, demonstrating that social influence, online discussions, and observable trading patterns can

directly shape sentiment (Boxer and Thompson, 2020; Pham et al., 2021). These behavioral factors provide a complementary lens to TPB constructs, which highlight the role of cognitive evaluation, social trust, and collective behavioral patterns in forming investor sentiment. They capture both rational and non-rational psychological responses to cryptocurrency market conditions. Based on these arguments, the following hypotheses are proposed:

H4: Perceived risk negatively influences investor sentiment.
H5: Trust positively influences investor sentiment.
H6: Herding behavior positively influences investor sentiment.

Investor attention refers to the degree of focus or cognitive resources that investors allocate to market information, news, and social cues when making investment decisions (Barber and Odean, 2008; Da et al., 2011). In cryptocurrency markets, characterized by high volatility, rapid information diffusion, and limited fundamental valuation anchors, investor attention is especially critical as it determines which information is processed and acted upon, thereby shaping sentiment formation. While market-level studies often operationalize investor attention using observable proxies, individual-level studies may capture attention through investors' cognitive engagement with information (Zaichkowsky, 1985). In this study, investor attention refers to the individual level as the extent to which investors allocate cognitive resources toward cryptocurrency-related information, analysis, and market signals. Therefore, rather than using market-level attention proxies such as search volume or news frequency, this study captures investors' subjective attention allocation through survey-based measures.

From a theoretical perspective, investor attention functions as a cognitive and behavioral mechanism through which both TPB-based and behavioral determinants impact investor sentiment. Regarding TPB-based determinants, attitude toward cryptocurrency, subjective norms, and perceived behavioral control can direct investors' focus toward specific market signals. Individuals with positive attitudes or strong social endorsement are more likely to actively monitor market developments, increasing their attention allocation (Ajzen, 1991; Pham et al., 2021).

Similarly, higher perceived behavioral control encourages investors to seek and process relevant information effectively, further enhancing their attention toward the market. Besides, behavioral determinants, including perceived risk, trust, and herding behavior, also operate through attention. Investors who perceive low risk or have high trust in the market are more willing to engage with available information and participate actively. Conversely, high perceived risk may narrow attention to downside outcomes or even lead to avoidance, thereby indirectly shaping sentiment. Herding behavior amplifies attention to social signals and observed actions of peers, which can further influence sentiment formation (Boxer and Thompson, 2020; Pham et al., 2021).

Empirical studies support the mediating role of attention in financial markets. Barber and Odean (2008) demonstrated that investor attention drives trading behavior and short-term sentiment shifts. In the cryptocurrency context, research shows that social media engagement, search activity, and other behavioral proxies of attention mediate the effects of psychological, social, and behavioral factors on market sentiment (Naeem et al., 2021; Sun et al., 2021). This indicates that the intensity and focus of investors' attention can amplify or attenuate the impact of underlying determinants on sentiment. Based on these arguments, the following hypotheses are proposed:

H7: Investor attention positively influences investor sentiment.
H8a: Investor attention mediates the relationship between attitude toward cryptocurrency and investor sentiment.
H8b: Investor attention mediates the relationship between subjective norm and investor sentiment.
H8c: Investor attention mediates the relationship between perceived behavioral control and investor sentiment.
H8d: Investor attention mediates the relationship between perceived risk and investor sentiment.
H8e: Investor attention mediates the relationship between trust and investor sentiment.
H8f: Investor attention mediates the relationship between herding behavior and investor sentiment.

Based on the hypotheses, the study proposes the research model presented in Fig. 1.

3. Research methods and materials

3.1. Research approach and measures

This study adopts a quantitative research approach to examine the influential factors on investor sentiment in the cryptocurrency market. A direct survey method is employed to collect primary data from individual investors in Vietnam who have experience and interest in cryptocurrency investment. A structured questionnaire is developed based on validated measurement scales from prior studies in the fields of cryptocurrency investment and related theoretical perspectives. In addition, some items are adapted to fit the context of cryptocurrency investment. Responses are measured using a five-point Likert scale, ranging from "1 - Strongly disagree" to "5 - Strongly agree." To ensure clarity and cultural appropriateness, the original English questionnaire was translated into Vietnamese using a translation and back-translation procedure (Brislin, 1970). Table 1 presents the measurements for the constructs and their academic sources.

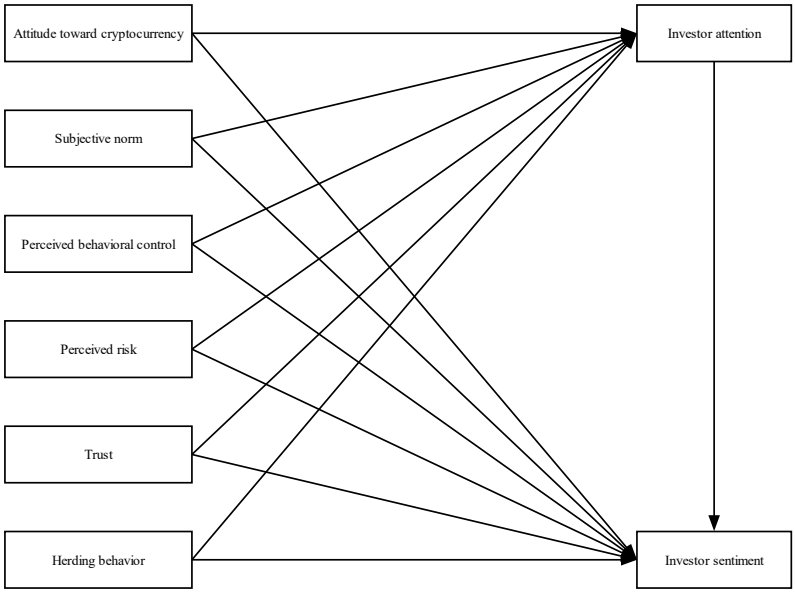


Fig. 1: Research model

Table 1: Measurement of constructs and sources

Constructs	Items	Source
Attitude toward cryptocurrency (ATC)	ATC1: It is wise to buy cryptocurrencies. ATC2: It's a good idea to buy cryptocurrencies. ATC3: It is useful to buy cryptocurrencies. ATC4: Cryptocurrencies are worth buying.	Pilatin and Dilek (2024)
Subjective norm (SN)	SN1: The people who are important to me think that I should invest in cryptocurrencies. SN2: The people who influence me think that I should invest in cryptocurrencies. SN3: People whose opinions I value think that I should invest in cryptocurrencies.	Pham et al. (2021)
Perceived behavioral control (PBC)	PBC1: I have the knowledge, skills, and resources necessary to invest in cryptocurrencies. PBC2: I know how to use the knowledge, skills and resources necessary to invest in cryptocurrencies. PBC3: I am confident that I can easily invest in cryptocurrencies. PBC4: The decision to invest in cryptocurrencies is entirely under my control.	Pilatin and Dilek (2024)
Perceived risk (PR)	PR1: Investing in cryptocurrencies is risky. PR2: There is too much uncertainty associated with investing in cryptocurrencies. PR3: Compared with other currencies/investments, cryptocurrencies are riskier due to their high volatility. PR4: The uncertainty of whether the markets will rise or fall keeps me from buying cryptocurrencies.	Pham et al. (2021) and Cuong et al. (2025)
Trust (TR)	TR1: I believe that the technological systems used in cryptocurrency investments are reliable. TR2: I have confidence in the security measures implemented by cryptocurrency platforms. TR3: Advancements in blockchain technology increase my trust in cryptocurrency investments. TR4: Positive experiences with cryptocurrency investment systems increase my trust in cryptocurrency platforms.	Hasan et al. (2024)
Herding behavior (HB)	HB1: Other investors' decisions to invest in cryptocurrencies influence my investment decisions. HB2: Other investors' decisions to buy and sell cryptocurrencies influence my investment decisions. HB3: I am willing to follow other investors when making cryptocurrency investment decisions. HB4: I am willing to rely on other investors' opinions rather than my own information when investing in cryptocurrencies.	Boxer and Thompson (2020) and Pham et al. (2021)
Investor attention (IA)	IA1: I am interested in reading information about how a cryptocurrency project or token is created and operates. IA2: I am interested in reading analytical reports or research-based articles about cryptocurrencies (e.g., market analysis or expert reports). IA3: I have compared characteristics (e.g., risk, return, utility, or technology) among different cryptocurrencies. IA4: I think there are significant differences among cryptocurrencies in terms of their value, risk, and potential.	Zaichkowsky (1985)
Investor sentiment (IS)	IS1: I feel optimistic about the future of cryptocurrencies. IS2: I am confident about investing in cryptocurrencies. IS3: I expect cryptocurrency prices to perform well in the future. IS4: Overall, I have a positive outlook on the cryptocurrency market. IS5: My current feelings toward cryptocurrencies are positive. IS6: I am not pessimistic about cryptocurrency investment opportunities.	Metawa et al. (2019)

3.2. Sampling and data collection

The sampling and data collection process in this study is designed based on the characteristics of cryptocurrency investors in Vietnam, as reported by recent industry and academic sources. Vietnam has emerged as one of the leading countries globally in cryptocurrency adoption. According to Chainalysis

(2025), Vietnam ranked 7th in the number of crypto asset holders worldwide in 2025, reflecting strong participation from retail investors. In terms of market size, the number of cryptocurrency users in Vietnam is estimated to range around 17 million individuals (approximately 17% of the population). From a demographic perspective, the cryptocurrency market in Vietnam is dominated by retail investors, particularly younger individuals. The data from the State Bank of Vietnam's Crypto Market Report indicate that approximately 65% of crypto users are aged between 18 and 34, 25% are aged 35 to 54, and 10% are over 55 years old. There is a huge gap between male and female cryptocurrencies ownership, with 44% of its male population saying it owns cryptocurrency as compared to 35% of the female population. Amongst all the different cryptocurrencies, Bitcoin reigns as the most popular cryptocurrency, with one in every five Vietnamese cryptocurrency owners holding Bitcoin. Besides cryptocurrency, Vietnamese investors are also very involved in Game Finance, which is another popular cryptocurrency category that combines gaming and DeFi.

Given the absence of an official sampling frame for cryptocurrency investors in Vietnam, this study adopted the stratified sampling method mixed with a non-probability (convenience) sampling method. The sample was stratified according to gender and age groups based on recent reports on the demographic characteristics of Vietnamese cryptocurrency investors. Within each stratum, respondents were directly recruited through multiple cryptocurrency communities, investment forums, and social media groups until the targeted proportions were approximately achieved. This approach was chosen to improve the demographic representativeness of the sample while acknowledging the practical constraints associated with surveying cryptocurrency investors in an emerging market. For other characteristics, the authors selected convenience sampling.

This study followed ethical principles for research involving surveyed participants. Before completing the questionnaire, respondents were provided with information regarding the purpose of the study, the voluntary nature of participation, and the confidentiality of their responses. Participation was entirely voluntary, and respondents could discontinue the survey at any time without providing justification. No personally identifiable information was collected, and all data were used solely for academic purposes. Besides, the measurement items for predictor and dependent constructs were presented in different sections to minimize response consistency bias.

Prior to the main survey, a pilot study was conducted with 40 cryptocurrency investors in Vietnam to evaluate the clarity, comprehensibility, and contextual suitability of the questionnaire. The pilot respondents were asked to provide feedback regarding ambiguous wording, unfamiliar terminology, and the overall questionnaire structure. The results indicated that the measurement items were generally understandable and consistent with the intended constructs. Based on the feedback received, minor modifications were made, including refining several Vietnamese expressions, simplifying technical cryptocurrency-related terms, and improving item descriptions to enhance respondents' understanding. No measurement items were removed because all constructs demonstrated acceptable preliminary reliability and content validity. The main survey was carried out from January 2026 to March 2026. After data cleaning, incomplete or inconsistent responses were removed to maintain data quality. A total of 437 valid responses were collected for analysis, which satisfies the minimum sample size requirements for structural equation modeling (SEM) and ensures sufficient statistical power.

3.3. Data analysis

To examine the potential common method bias, the study employed Harman's single-factor test using SPSS 27 with a variance-extracted threshold under 50%. After that, data were analyzed using PLS-SEM with SmartPLS 3. PLS-SEM was appropriate because it is suitable for prediction-oriented research, complex models involving multiple latent constructs and mediation relationships, and exploratory studies in emerging research contexts. In addition, PLS-SEM requires fewer distributional assumptions than CB-SEM, making it appropriate for survey-based data analysis. The analysis proceeded in two stages. First, the measurement model was assessed by examining indicator loadings, Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) for convergent validity, alongside the Fornell–Larcker criterion and HTMT ratio to ensure discriminant validity. Second, the structural model was evaluated by analyzing path coefficients, adjusted R^2 values, effect sizes f^2 and blindfolding Q^2, and the model fit assessment using SRMR and NFI indices. The significance of direct effects of TPB-based and behavioral determinants on investor sentiment, the effect of investor attention on sentiment, and the mediating role of investor attention was tested using bootstrapping with 5,000 resamples.

4. Results and discussion

4.1. Profile of respondents

Table 2 presents the demographic characteristics of the sample (n = 437). The gender distribution indicates a slight predominance of male respondents (56.5%) over females (43.5%), suggesting a moderately balanced sample while still reflecting the male-leaning nature of cryptocurrency participation. In terms of age, the sample is heavily skewed toward younger individuals, with 64.9% of respondents aged between 18 and 34, followed by 24.7% in the

35–54 group and 10.4% aged above 55. This pattern underscores the prominence of younger cohorts in cryptocurrency markets, consistent with their greater familiarity with digital technologies and higher risk tolerance.

Regarding educational attainment, the majority of respondents hold an undergraduate degree (59.0%), while 26.8% possess postgraduate qualifications and 14.2% have a high school education or below. This distribution suggests a relatively well-educated sample, which may facilitate engagement with complex financial instruments such as cryptocurrencies. In terms of income, respondents are primarily concentrated in the lower- to middle-income brackets, with 39.1% earning less than USD 500 and 45.1% earning between USD 500 and 1500, while only 15.8% report incomes above USD 1500. This indicates that cryptocurrency investment is accessible across income levels, rather than being confined to higher-income groups.

With respect to investment experience, 44.8% of respondents report having 1–3 years of experience, 33.9% have less than one year, and 21.3% have more than three years. This suggests that the sample is dominated by investors with moderate experience, alongside a substantial proportion of relatively new entrants. Finally, the results reveal a strong reliance on centralized exchanges, with 81% of respondents using platforms such as Binance and Bybit, compared to 14.2% using decentralized exchanges and only 4.8% using both. This pattern highlights the continued dominance of centralized trading infrastructures, likely due to their perceived ease of use, liquidity, and accessibility.

Table 2: Demographics of respondents (n = 437)

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	247	56.5
	Female	190	43.5
Age	18 - 34	284	64.9
	35 - 54	108	24.7
	Above 55	45	10.4
Educational level	High school and below	62	14.2
	Undergraduate	258	59.0
	Postgraduate	117	26.8
Monthly income (USD)	< 500	171	39.1
	500 - 1500	197	45.1
	> 1500	69	15.8
Investment experience	< 1 year	148	33.9
	1 - 3 years	196	44.8
	> 3 years	93	21.3
Type of exchange used	Centralized exchanges (CEX)	354	81.0
	Decentralized exchanges (DEX)	62	14.2
	Both CEX and DEX	21	4.8

4.2. Scale reliability and validity assessment

Harman's single-factor test was conducted to assess potential common method bias. The results showed that the factors accounted for 29.04% of total variance, which is below the recommended threshold of 50%. Therefore, common method bias is unlikely to significantly affect the findings.

The assessment of the measurement model, as reported in Table 3, indicates that all constructs demonstrate satisfactory reliability and convergent validity. All outer loadings exceed the recommended threshold of 0.70, ranging from 0.716 to 0.941, thereby confirming adequate indicator reliability and supporting the retention of all measurement items (Hair et al., 2021).

Internal consistency reliability is further established through Cronbach's alpha, composite reliability (CR), and rho_A. Specifically, Cronbach's alpha values range from 0.815 to 0.952, while CR values vary between 0.890 and 0.961, all of which exceed the commonly accepted benchmark of 0.70 and remain below the upper limit of 0.95, indicating that construct reliability is satisfactory without evidence of redundancy among indicators (Hair et al., 2021). Similarly, rho_A values ranging from 0.819 to 0.952 provide additional confirmation of strong internal consistency across all latent variables.

Table 3: Construct reliability and convergent validity

Constructs	Outer loading range	CA	rho_A	CR	AVE
ATC	0.749 – 0.859	0.842	0.844	0.894	0.680
SN	0.823 – 0.876	0.815	0.819	0.890	0.730
PBC	0.898 – 0.941	0.938	0.938	0.955	0.842
PR	0.876 – 0.915	0.917	0.921	0.941	0.800
TR	0.716 – 0.871	0.852	0.874	0.900	0.693
HB	0.774 – 0.878	0.838	0.860	0.890	0.670
IA	0.790 – 0.869	0.856	0.864	0.903	0.699
IS	0.864 – 0.925	0.952	0.952	0.961	0.806

The convergent validity is evidenced by average variance extracted (AVE) values, which range from 0.670 to 0.842 and exceed the minimum acceptable threshold of 0.50 (Fornell and Larcker, 1981). This indicates that each construct explains a substantial proportion of variance in its associated indicators. In particular, perceived behavioral control and investor sentiment exhibit relatively high AVE values, suggesting strong convergence among their measurement items. The discriminant validity of the constructs was assessed using the Fornell–Larcker criterion, as presented in Table 4. The results

indicate that the square root of the average variance extracted (AVE) for each construct, shown along the diagonal, is consistently higher than the corresponding inter-construct correlations in the same row and column. This pattern satisfies the Fornell–Larcker criterion and confirms that each construct is empirically distinct from the others (Fornell and Larcker, 1981). For example, constructs such as attitude toward cryptocurrency (ATC = 0.825) and herding behavior (HB = 0.819) meet the required criterion, as their respective AVE square roots are greater than the inter-construct correlation (0.214). Besides, the HTMT results further confirm the establishment of discriminant validity among the constructs, as all HTMT values are well below the conservative threshold of 0.85 (Henseler et al., 2015), with the highest value observed between investor attention and investor sentiment (0.522). Overall, the findings provide robust evidence that all constructs in the model are empirically distinct, confirming that the measurement model meets the recommended criteria for discriminant validity within the PLS-SEM framework (Fornell and Larcker, 1981; Hair et al., 2021).

Table 4: Discriminant validity by Fornell-Larcker criterion

Constructs	ATC	HB	IA	IS	PBC	PR	SN	TR
ATC	0.825							
HB	0.214	0.819						
IA	0.336	0.341	0.836					
IS	0.330	0.320	0.476	0.898				
PBC	0.369	0.197	0.381	0.458	0.918			
PR	-0.099	0.191	-0.120	-0.166	-0.160	0.894		
SN	0.219	0.065	0.259	0.245	0.291	0.221	0.855	
TR	0.349	0.379	0.352	0.423	0.363	0.056	0.220	0.833

4.3. Research model assessment

The results of the structural model and hypotheses testing are presented in Table 5. The findings indicate that, among the proposed direct relationships, H1 is not supported, as attitude toward cryptocurrency (ATC) does not have a statistically significant effect on investor sentiment (IS) (β = 0.044, p = 0.309). In contrast, H2 is supported, with subjective norm (SN) showing a positive and significant effect on IS (β = 0.105, p = 0.008).

Similarly, H3 is supported, as perceived behavioral control (PBC) has a positive and significant impact on IS (β = 0.204, p = 0.001). H4 is also supported, with perceived risk (PR) exhibiting a significant negative effect on IS (β = -0.165, p < 0.001). Furthermore, H5 and H6 are supported, as trust (TR) (β = 0.185, p < 0.001) and herding behavior (HB) (β = 0.150, p = 0.002) both positively and significantly influence investor sentiment. H7 is supported as well, with investor attention (IA) demonstrating the strongest positive effect on IS (β = 0.220, p < 0.001).

Table 5: Structural model evaluation and hypothesis testing

Hypothesis: Path	Original sample (β)	T-statistics	P-values	Decision
H1: ATC→IS	0.044	1.018	0.309	Not supported
H2: SN → IS	0.105	2.651	0.008	Supported
H3: PBC → IS	0.204	3.477	0.001	Supported
H4: PR → IS	-0.165	3.830	0.000	Supported
H5: TR → IS	0.185	3.601	0.000	Supported
H6: HB → IS	0.150	3.180	0.002	Supported
H7: IA → IS	0.220	4.167	0.000	Supported
H8a: ATC → IA → IS	0.027	2.346	0.019	Supported
H8b: SN → IA → IS	0.040	2.677	0.008	Supported
H8c: PBC → IA → IS	0.035	2.166	0.031	Supported
H8d: PR → IA → IS	-0.040	2.748	0.006	Supported
H8e: TR → IA → IS	0.027	1.995	0.047	Supported
H8f: HB → IA → IS	0.057	3.015	0.003	Supported

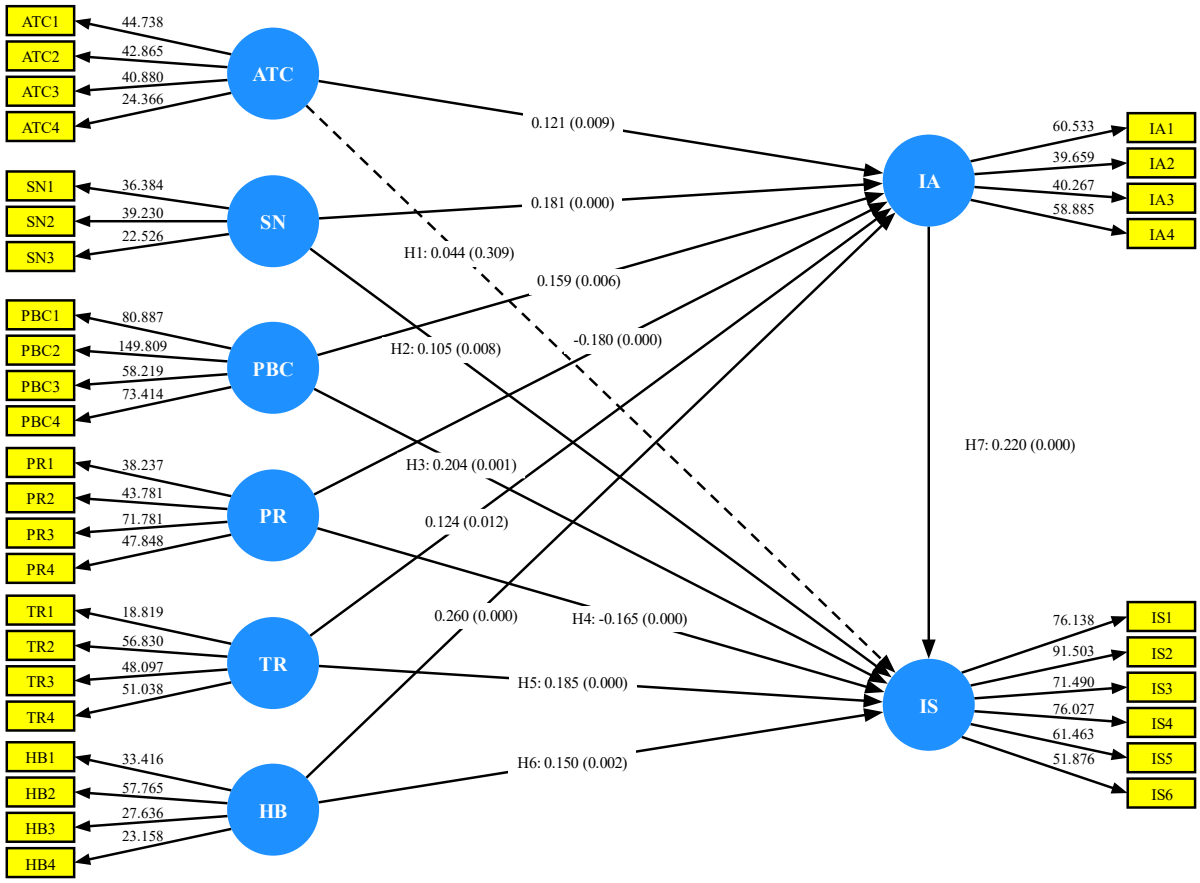
Regarding the mediating effects, all indirect hypotheses (H8a–H8f) are supported. Specifically, investor attention significantly mediates the relationships between ATC (H8a: β = 0.027, p = 0.019), SN (H8b: β = 0.040, p = 0.008), PBC (H8c: β = 0.035, p = 0.031), PR (H8d: β = -0.040, p = 0.006), TR (H8e: β = 0.027, p = 0.047), and HB (H8f: β = 0.057, p = 0.003) with investor sentiment. Overall, the results confirm support for all hypothesized relationships except H1, indicating that investor attention plays a significant mediating role while most direct effects are statistically significant.

The results in Table 6 indicate that the model demonstrates acceptable explanatory power and predictive relevance. Regarding explanatory power, the R^2 value for investor attention (IA) is 0.302 and for investor sentiment (IS) is 0.392, suggesting that the model explains 30.2% and 39.2% of the variance in these endogenous constructs, respectively. In terms of predictive relevance, the Q^2 values for IA (0.200) and IS (0.311) are both greater than zero, confirming that the model has predictive relevance. More specifically, Q^2 values above 0 indicate predictive accuracy, while values around 0.15 and 0.35 are considered medium and large predictive relevance, respectively. Therefore, the Q^2 for IA can be interpreted as moderate, whereas IS approaches a relatively strong level of predictive relevance. Thus, the Q^2 values are not low and are well within acceptable ranges.

Table 6: Model explanatory power, effect sizes and predictive relevance

Endogenous construct	R^2	Adjusted R^2	Q^2	f^2
IA	0.302	0.292	0.200	ATC (0.116); SN (0.038); PBC (0.026); PR (0.038); TR (0.016); HB (0.077)
IS	0.392	0.382	0.311	ATC (0.003); SN (0.014); PBC (0.048); PR (0.036); TR (0.040); HB (0.027); IA (0.056)

The effect size (f^2) results indicate that individual predictors exert relatively small effects on the endogenous constructs. According to Cohen (1988), most f^2 values fall within the small effect size range (0.02–0.15), with no constructs reaching a medium effect level. Notably, investor attention (IA) demonstrates the largest effect on investor sentiment (IS) (f^2 = 0.056), followed by perceived behavioral control (PBC) (f^2 = 0.048) and trust (TR) (f^2 = 0.040), indicating their relatively stronger contributions compared to other predictors. In contrast, attitude toward cryptocurrency (ATC) exhibits a negligible effect on IS (f^2 = 0.003), which is consistent with its non-significant direct relationship. For investor attention (IA), attitude (ATC) (f^2 = 0.116) and herding behavior (HB) (f^2 = 0.077) show comparatively larger effects, while the remaining variables demonstrate smaller contributions. Although the individual effect sizes are modest, their combined influence results in moderate explanatory power (R^2), which is typical in behavioral and social science research where outcomes are influenced by multiple factors with incremental effects rather than a single dominant predictor. Fig. 2 shows the statistical results of the research model.



Path labels show path coefficients (β) with p-values in parentheses; values on outer arrows are t-values of indicator loadings; solid arrow = significant path; dashed arrow = non-significant path (H1); indirect effects (H8a–H8f)

Fig. 2: Statistical results of research model

Table 7 presents the model fit assessment results. The standardized root mean square residual (SRMR) value is 0.054 for both the saturated and estimated models, which is below the recommended threshold of 0.08, indicating a satisfactory overall model fit. The discrepancy measures, d_ULS (1.666) and d_G (0.717), are reported for both models and provide additional information on the distance between the empirical and model-implied correlation matrices. Furthermore, the normed fit index (NFI) reaches 0.829, suggesting an acceptable level of model fit, although it does not exceed the more stringent benchmark of 0.90. Since PLS-SEM primarily emphasizes prediction rather than exact model fit, the SRMR value is generally considered the most important global fit criterion. Overall, the model demonstrates an acceptable level of goodness-of-fit, supporting the adequacy of the proposed structural

model for subsequent hypothesis testing and interpretation.

Table 7: Model fit assessment

Fit indices	Saturated model	Estimated model
SRMR	0.054	0.054
d_ULS	1.666	1.666
d_G	0.717	0.717
Chi-square	1838.154	1838.154
NFI	0.829	0.829

4.4. Discussion of findings

The findings of this study provide partial support for the proposed TPB-based relationships and strong support for behavioral and attention-based mechanisms in explaining investor sentiment in the cryptocurrency market. Contrary to expectations, attitude toward cryptocurrency does not have a significant direct effect on investor sentiment, leading to the rejection of H1. This finding differs from previous studies (Pham et al., 2021; Pilatin and Dilek, 2024) suggesting that favorable attitudes enhance positive perceptions toward cryptocurrency investment. Attitude represents a relatively stable cognitive evaluation of cryptocurrency, whereas investor sentiment reflects a more dynamic psychological state influenced by recent market conditions, information flows, and emotional responses.

Therefore, a positive evaluation of cryptocurrency as a technology or investment opportunity may not necessarily translate into optimistic sentiment at a particular point in time. Besides, cryptocurrency markets are highly speculative and information-intensive, causing investors to rely more heavily on social signals, perceived capability, and market attention when forming sentiment. The significant indirect effect through investor attention suggests that attitude may influence sentiment primarily by encouraging information engagement rather than through a direct pathway. This finding extends the application of TPB in cryptocurrency research by suggesting that favorable attitudes alone are insufficient to explain investor sentiment. Instead, attitudes appear to influence sentiment only when they stimulate investors to actively seek and process market information, highlighting the importance of attention-driven information processing in highly speculative markets.

In contrast, the results support H2 and H3, confirming that subjective norm and perceived behavioral control positively influence investor sentiment. The significant effect of subjective norm is consistent with prior research (Boxer and Thompson, 2020; Pham et al., 2021), highlighting the importance of social influence in cryptocurrency markets. In Vietnam, where online communities (e.g., Facebook groups, Telegram channels) and peer networks play a central role in disseminating information, investors are particularly susceptible to collective opinions and social signals. Similarly, the positive effect of perceived behavioral control aligns with previous findings (Cuong et al., 2025; Pilatin and Dilek, 2024), indicating that investors who feel more knowledgeable and capable tend to exhibit more optimistic sentiment. This reflects the increasing accessibility of cryptocurrency trading platforms and educational resources in Vietnam, which may enhance investors' confidence and engagement.

The findings also provide strong support for behavioral factors, including perceived risk, trust, and herding behavior (H4–H6). The negative effect of perceived risk on investor sentiment is consistent with prior studies (Cuong et al., 2025; Pham et al., 2021), confirming that concerns about volatility and potential losses reduce optimism. This is particularly relevant in Vietnam, where regulatory uncertainty and frequent market fluctuations may heighten risk perceptions. Conversely, trust is found to have a positive and significant effect on sentiment, supporting H5 and aligning with existing literature (Cuong et al., 2025). In an emerging and partially regulated market, trust in exchanges, platforms, and transaction security plays a crucial role in shaping investor confidence. Herding behavior also exerts a positive influence on sentiment, supporting H6 and corroborating prior evidence (Boxer and Thompson, 2020; Pham et al., 2021). This suggests that Vietnamese investors are strongly influenced by the actions and opinions of others, which can amplify collective optimism, especially during periods of market uptrend.

Importantly, the results confirm the central role of investor attention, supporting H7 and all mediating hypotheses (H8a–H8f). The positive effect of investor attention on sentiment is consistent with the attention-based view in financial markets (Barber and Odean, 2008; Da et al., 2011), indicating that increased focus on market information, news, and discussions enhances investor optimism and expectations. Furthermore, the significant mediating effects suggest that both TPB-based and behavioral factors influence sentiment not only directly but also indirectly through attention. This finding is in line with prior studies (Naeem et al., 2021; Sun et al., 2021), which highlight the role of attention as a transmission mechanism in cryptocurrency markets. A particularly noteworthy result is the full mediation observed for attitude (H8a), where attitude does not directly influence sentiment but exerts its effect entirely through investor attention. This suggests that positive evaluations of cryptocurrency only translate into sentiment when they lead to increased engagement with market information. In contrast, subjective norm, perceived behavioral control, perceived risk, trust, and herding behavior exhibit partial mediation, indicating that these factors influence sentiment both directly and through attention. In the Vietnamese context, where cryptocurrency investment is dominated by retail investors and information is primarily disseminated through online communities and social media, investor attention functions as a selective information-processing mechanism that filters

market signals before they influence investor sentiment. This finding provides empirical support for the attention-based view by demonstrating how psychological and behavioral factors are translated into market perceptions through investors' allocation of attention.

Although all predictor variables exhibit statistically significant relationships with investor sentiment, the effect size analysis indicates that individual effects remain relatively small. This finding should be interpreted in light of the complex psychological nature of investor sentiment, which is rarely determined by a single factor but rather emerges from the cumulative influence of multiple cognitive, social, and behavioral mechanisms. The moderate explanatory power of the model (R^2 = 0.392) suggests that the combined contribution of these factors provides meaningful explanatory value. Among the predictors, investor attention demonstrates the largest effect size, reinforcing its central role as an information-processing mechanism in cryptocurrency sentiment formation. Therefore, the practical implication is not that individual factors independently create large changes in sentiment, but rather that multiple small psychological influences accumulate to shape investor perceptions in volatile cryptocurrency markets.

Overall, the findings indicate that investor sentiment in cryptocurrency markets should be understood as the outcome of multiple interacting psychological mechanisms rather than the consequence of any single determinant. While TPB explains investors' cognitive evaluations and perceived social influences, behavioral finance captures the effects of uncertainty, trust, and herd behavior under speculative market conditions. The attention-based view complements these perspectives by explaining how these cognitive and behavioral factors are transformed into investor sentiment through selective information processing. Therefore, the three theoretical perspectives should be viewed as complementary rather than competing explanations. Their integration provides a more comprehensive understanding of investor sentiment formation in cryptocurrency markets than any single theoretical framework alone. This integrated perspective is particularly relevant in Vietnam, where high retail participation, evolving regulation, and rapid information diffusion make investor attention a critical mechanism linking market information with investor psychology.

5. Conclusions

From a theoretical perspective, the study extends the application of TPB by showing that attitude toward cryptocurrency does not directly shape investor sentiment but operates indirectly through investor attention. This finding suggests that traditional TPB constructs alone are insufficient to explain psychological outcomes in highly speculative cryptocurrency markets. Furthermore, integrating TPB with behavioral finance demonstrates that investor sentiment is jointly influenced by both rational cognitive evaluations and behavioral biases. Finally, the study advances the attention-based view by empirically identifying investor attention as the cognitive mechanism linking these theoretical perspectives, thereby providing a more comprehensive explanation of investor sentiment formation in emerging cryptocurrency markets. It can be seen that investor sentiment in cryptocurrency markets cannot be fully understood through rational decision-making models alone. Rather, investor sentiment emerges from the interaction between cognitive evaluations, behavioral biases, social influence, and attention-driven information processing. As cryptocurrency markets continue to evolve in Vietnam and other emerging economies, understanding these psychological mechanisms will become increasingly important for both researchers and policymakers seeking to promote more transparent, stable, and sustainable digital asset markets.

The findings provide several practical implications that are particularly relevant to Vietnam, where cryptocurrency adoption is among the highest globally while the regulatory framework for digital assets is transitioning from an unregulated environment toward a supervised market. This institutional context suggests that investor sentiment is shaped not only by individual behavioral factors but also by the ongoing evolution of market governance and information transparency. For policymakers, the dominant role of investor attention indicates that strengthening the information environment should become an integral component of digital asset regulation. As Vietnam implements the pilot regulatory framework under Resolution No. 05/2025/NQ-CP and advances the digital transformation agenda outlined in Resolution No. 57-NQ/TW, regulatory authorities should complement legal supervision with centralized communication strategies. In particular, the Ministry of Finance, the State Securities Commission of Vietnam, and relevant agencies should establish official information channels that provide timely market updates, warnings against fraudulent token offerings, pump-and-dump schemes, and misinformation circulating on Facebook, TikTok, Telegram, YouTube, and Zalo, which are the primary information sources for many Vietnamese retail investors. Such initiatives would reduce information asymmetry during periods of heightened market volatility and improve investor protection as the domestic digital asset market gradually becomes formalized. For cryptocurrency exchanges, trust represents a critical determinant of investor sentiment in Vietnam because a substantial proportion of domestic investors have historically relied on offshore trading platforms operating outside the Vietnamese regulatory perimeter. As licensed digital asset service providers emerge under the new pilot framework, exchanges should differentiate themselves through stronger

cybersecurity standards, transparent proof-of-reserves reporting, robust anti-money laundering and know-your-customer compliance, and standardized Vietnamese-language risk disclosures according to the Law on Anti-Money Laundering No. 14/2022/QH15 and Resolution No. 66.23/2026/NQ-CP (effective from July 2026). Aligning operational practices with the requirements of the pilot regulatory regime would not only enhance investor confidence but also facilitate the Government's objective of developing a transparent and well-supervised domestic digital asset ecosystem.

The significant effect of perceived behavioral control also suggests that improving investor capability should become a policy priority. Rather than limiting financial education to basic cryptocurrency concepts, Vietnamese authorities could integrate digital asset literacy into broader national financial literacy and digital transformation programs. Universities, fintech associations, and the Vietnam Blockchain Association could collaborate to provide practical training on blockchain fundamentals, private key management, portfolio diversification, leverage risk, fraud identification, and cybersecurity awareness. Such initiatives would strengthen investors' confidence while reducing the behavioral biases associated with limited market knowledge. Finally, the significant influence of herding behavior demonstrates that cryptocurrency investment decisions in Vietnam are highly responsive to collective sentiment generated through online communities and social media influencers. Accordingly, regulators and exchanges should complement conventional market surveillance with real-time monitoring of abnormal social media activity and trading patterns to identify potential herd-driven market manipulation. At the same time, standardized disclosure requirements, responsible financial journalism, and evidence-based investor education should be promoted to encourage more independent investment decisions. These measures are particularly important as Vietnam transitions from a predominantly offshore and self-regulated cryptocurrency market toward a regulated domestic ecosystem under the Government's pilot digital asset framework.

Despite its contributions, this study has several limitations. Firstly, the cross-sectional design restricts the ability to capture dynamic changes in investor sentiment over time in highly volatile cryptocurrency markets. Moreover, although mediation analysis provides evidence of indirect associations, the cross-sectional design does not allow strong causal inference. Future research could employ longitudinal designs, panel data, or experimental approaches to examine the temporal sequence between psychological factors, investor attention, and sentiment formation. Secondly, although the measurement scale of investor attention captures individual cognitive attention and information engagement, it may not fully represent behavioral attention reflected through observable activities such as search frequency, browsing behavior, or trading activity. Future studies could combine survey-based measures with objective attention indicators such as Google Trends, social media activity, or blockchain transaction data. Thirdly, the sample is limited to Vietnamese retail investors, which may limit generalizability; future research could conduct cross-country comparisons. Finally, additional psychological factors such as overconfidence or fear of missing out (FOMO) could be included in future studies to further enrich the analysis of investor sentiment.

List of abbreviations

ATC	Attitude toward cryptocurrency
AVE	Average variance extracted
CA	Cronbach's alpha
CB-SEM	Covariance-based structural equation modeling
CEX	Centralized exchanges
CR	Composite reliability
d_G	Geodesic discrepancy
d_ULS	Unweighted least squares discrepancy
DEX	Decentralized exchanges
FEARS	FEARS index
f^2	Effect size
HB	Herding behavior
HTMT	Heterotrait-Monotrait ratio
IA	Investor attention
IS	Investor sentiment
NFI	Normed fit index
p	P-value
PBC	Perceived behavioral control
PLS-SEM	Partial least squares structural equation modeling
PR	Perceived risk
Q^2	Predictive relevance
rho_A	Dijkstra-Henseler's rho (composite reliability coefficient)
R^2	Coefficient of determination
SEM	Structural equation modeling
SN	Subjective norm
SPSS	Statistical Package for the Social Sciences
SRMR	Standardized root mean square residual
TPB	Theory of Planned Behavior
TR	Trust
β	Beta coefficient

Compliance with ethical standards

Ethical considerations

This study was reviewed and approved by the Institutional Review Board of the Academy of Policy and Development (Approval No. 2/CV-KHHT, dated 05/01/2026). Informed consent was obtained from all participants prior to data collection. Respondents were assured of anonymity and their right to withdraw at any time.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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