

Herding Behaviour in Cryptocurrency Markets: Behavioural Trading Strategy Design and Decision Risk Quantification

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Abstract. Cryptocurrency markets are often volatile with no central authority as a decentralized system based on cryptography makes the records, making investors in this sector particularly susceptible to reliance on social cues rather than fundamentals. This paper uses a qualitative study design that collects 1000 text-rich entries in social media and forum posts to determine herding behaviour in cryptocurrency markets, particularly behavioural trading strategy design and decision risk quantification. This data is collected using a purposive sampling strategy that selects texts published during periods of extreme volatility, such as during Bitcoin crashes and meme coin surges between January 2021 and January 2025. Following a thematic analysis of this data, the results indicate that herding behaviour among investors is mostly caused by fear of missing out (FOMO), emotional contagion, influencer reliance, collective rationalisation of risk, and post-herd regret and justification. These social cues lead to investors relying on them to value cryptocurrency assets instead of conducting fundamental analysis, which would be beneficial.

Keywords: Herding behaviour, Investor psychology, FOMO in digital assets, Emotional contagion, Crypto trading.

1. Introduction

With Industry 4.0, cryptocurrency has joined traditional investment methods in capital markets as an investment method. Handoko et al. suggest that investors take advantage of the volatile nature of cryptocurrencies to gain profits in the form of capital gains, the difference between purchasing price and sale price [1]. However, when making these trading decisions, investors are not always rational, as explained by theories such as Fama's efficient market hypothesis and Innocenti and Sirigu's expected utility theory (rational choice theory) [2][3]. The theories by the aforementioned authors did not reflect reality, as traders were not rational and the market was subject to psychological biases, herd behaviour, and overreactions that deviated from the predictions of these fully efficient and rational models. Thus, Barberis and Thaler pioneered behavioural finance theories that proved that investors are influenced by biases and psychological influences, such as herding behaviour in their decision-making [4]. Herding behaviour is particularly pronounced in the cryptocurrency markets, which are known for high volatility, limited regulation, and a large retail investor base [5]. As explained by Devenow and Welch, it is a market situation where high-profile investors tend to be swayed by the investment moves of others or market consensus instead of their own fundamental analysis [6]. Xin et al. find that novice investors, who are more vulnerable to this bias due to lack of knowledge and a propensity to respond based on social pressure or emotions, whereas experienced investors are better equipped to control this bias through learning from past mistakes and better risk evaluation [7]. Bearing the risky and speculative nature of the cryptocurrency asset class due to high volatility, this paper employs a qualitative case study methodology to explore the behavioural and social dynamics of herding in cryptocurrency markets. Apart from enriching the literature on behavioural finance, the findings from this study will also inform the creation of risk management programs, frameworks for regulation and initiatives to educate investors to make better decisions in the digital assets market.

2. Literature Review

2.1 Theoretical Origin of Herd Behaviour

Scholars critique investor rationality and efficient market assumptions due to market anomalies [8][9][10][11], leading to behavioural finance grounded in decision-making theories [12]. This emerged after Fama's efficient market hypothesis and rational choice theories failed to explain market anomalies [2]. The review explores herding theory in behavioural finance, analysing crypto market trading strategies and decision risks to guide future research.

2.2 Theories for explaining Herd Behaviour

Herding involves social imitation: Bikhchandani et al. defined informational cascades, where individuals follow others over their own data [13]. Gamayel & Preda find less-liquid crypto investors herd more due to cascades [14]. Prospect theory (loss aversion) shows traders avoid losses more than seeking gains [15]. Chen et al. found prospect-prized crypto assets are overpriced, attracting herding as investors ignore fundamentals [16]. Noise trading, where investors follow trends and misreact to news, also drives herding [17].

2.3 Decision-making risks brought by herd behaviour

Market anomalies challenge efficient market assumptions; herding theories highlight belief-driven decisions. Prospect theory shows biases affect choices [18], while noise trading creates price-fundamental divergences [12]. Preference for crowd actions amplifies inefficiencies. Anomalies and biases, driven by crowd overconfidence, form/collapse crypto bubbles [19]. Almasour notes post-gain traders turn risk-seeking (deviation 0.83), increasing purchases, while losses drive risk aversion. Herding risks persist amid rational/irrational crowd sentiments [18].

3. Methodology

With the identified research gaps, this study addresses them by exploring herding behavior in cryptocurrency markets through qualitative case analysis of social media sentiment, news flows, and market events (2021–2025), like Terra/LUNA and Dogecoin incidents. Using thematic analysis on 1,000+ public texts, it identifies themes like FOMO, emotional contagion, and authority-driven decisions, grounded in constructivist epistemology to uncover psychological/social mechanisms behind investor behavior, ensuring ethical compliance with public data use.

The study will add to past literature by following news flows, and social media sentiment on the digital assets market. To discover whether investors in the cryptocurrency market follow market sentiment or base their investment decisions on their own fundamental analysis, as well as the psychological and social mechanisms underlying herding behaviour among cryptocurrency traders, this study adopts a qualitative case study methodology. According to Lakshman et al. and Twining et al., a qualitative study offers a more open method of exploring the in-depth attitudes, opinions and behaviour of a group of people instead of the strict set of questions of a quantitative study [20] [21]. Thus, instead of depending on price-volume analysis or statistical modelling that would not reveal the underlying motions and motivations that lead retail investors to copy others, this study, with an aim to comprehend how individual traders perceive, absorb, and respond to crowd sentiment during significant market occurrences, uses a qualitative method to reveal the subjective meanings, motivations, and emotional dynamics that influence collective investing behaviour. Understanding how people interpret group behaviour is crucial for designing behavioural trading strategies and assessing risk in quickly changing, sentiment-driven environments like bitcoin markets. This methodology provides rich contextual insights that enable a deeper comprehension of herding dynamics in the digital era.

Thus, the study focuses on lived investor experiences, patterns of communication, and collective sentiment dynamics during market events to test for herding behaviour among cryptocurrency traders.

This data consists of 1000 text-rich entries in social media and forum posts (such as Reddit threads like r/CryptoCurrency and r/Bitcoin, Twitter/X posts around major market events and Telegram/Discord discussion transcripts), news articles and commentary (such as influencer blog posts, YouTube Transcripts and crypto news sites such as CoinDesk and CoinTelegraph), and case reports on past herding events (e.g. Terra/LUNA collapse and Dogecoin hype). These platforms offer data from public online platforms where cryptocurrency traders frequently exchange information, which is collected using a purposive sampling strategy that selects texts published during periods of extreme volatility, such as during bitcoin crashes and meme coin surges between January 2021 and January 2025. Assuming that social interaction, individual experiences, and context-dependent information flows influence investor behaviour, the study is based on a constructivist epistemology. A case study approach is used to enable a thorough investigation of many market occurrences where herding was thought to have taken place. These include the 2022 Terra/LUNA disaster, the 2021 Dogecoin boom, and the early 2024 Bitcoin price spike. These incidents were chosen due to their impact, international media coverage, and the amount of online discussion they sparked.

After familiarization with the data by reading all posts and transcripts and manually removing spam and promotional content, Clarke and Braun’s six-step thematic analysis framework is used to filter the data for relevance using keywords such as “FOMO,” “everyone’s buying,” “panic selling,” “don’t miss out,” “I’m selling because of the whales,” “influencer trust,” “loss panic,” and “group confirmation.” [22] These words act as narrow codes that are then used to develop themes such as Fear of Missing Out (FOMO), emotional contagion, mimetic behaviour, authority-driven decisions and risk rationalisation, to construct meaning.

4. Results

A variety of behavioural patterns and emotional reactions suggestive of herding behaviour were brought to light by the thematic analysis of online discourse spanning several bitcoin market occurrences. Fear of Missing Out (FOMO), Emotional Contagion, Influencer Reliance, Collective Rationalization of Risk, and Post-Herd Regret and Justification were the five main themes that surfaced from the coded data, showing how social cues and the apparent agreement of the public frequently have a greater impact on retail investors than the underlying value of assets as explained below:

4.1 Fear of Missing Out (FOMO)

Of the five themes, FOMO emerged as the most prevalent and powerful driver of herd behaviour, with 84% of the data showing that investors made investment choices due to FOMO. The effect was especially pronounced for price surges that would allow them to realise gains, as shown in Figure 1 below. During the Dogecoin 2021 price rally, people disregarded strategic purchases that would be much more beneficial and profitable and bought crypto assets at non-optimal prices due to the fear of missing out. This can be seen in posts with terms such as “missed Bitcoin, not missing this one.”

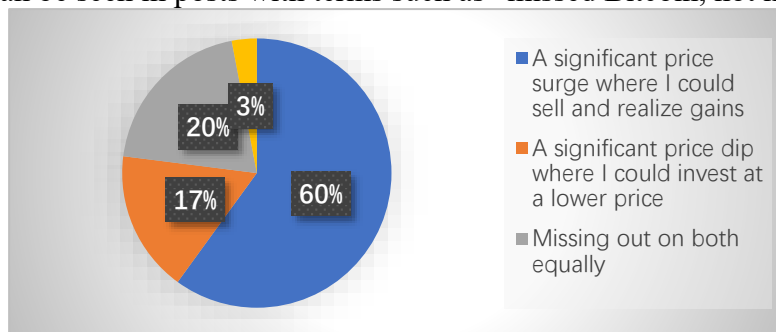


Figure 1: Outcomes that Crypto investors fear the most

4.2 Emotional Contagion and Panic

In online crypto forums, emotional states were found to be extremely contagious, including enthusiasm, euphoria, and panic, particularly during market meltdowns such as the 2022 LUNA collapse. Posts like "Get out now, everything's going to zero!" caused sell-offs and soon spread panic. Similarly, during price spikes, Reddit discussions displayed emotional overtones, with crowd-driven euphoria ("It's happening again!") and exclamatory encouragements ("To the moon!"). These trends imply that digital echo chambers exacerbate herd behaviour by amplifying emotional reactions.

4.3 Influencer Reliance and Social Authority

Both celebrities and crypto personalities were found to set the tone for decision-making. A perfect illustration is the following post on X (Figure 2), using strong, emotionally loaded language to assert authority and shape the trading behaviour of retail investors.

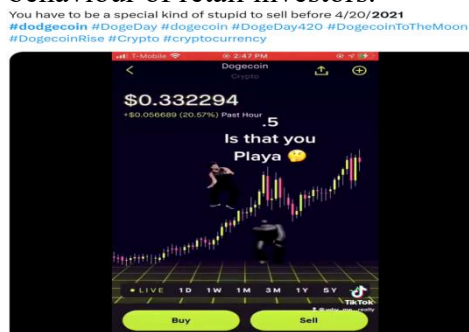


Figure 2: A post from X showing the influence of high-profile figures [23]

In the comment section of such posts and those by other influential figures such as Elon Musk, it is clear that the masses do not question their authority, and some even perceive these individuals to have insider knowledge or foresight.

4.4 Collective Rationalisation of Risk

Many users used the argument of community involvement to defend risky financial choices, even when they acknowledged irrationality. The phrases "if it crashes, we all crash together" and "everyone's buying, it can't be wrong" were frequently used, diminishing individual accountability and justifying herd behaviour. This phenomenon also emphasises the significance of social proof, which is the idea that people believe that other people's behaviour is appropriate in situations where things are unclear. When Bitcoin was on the rise in 2024, investors frequently disregarded warning indicators, believing that group movement was enough to justify further investment.

4.5 Post-Herd Regret and Retrospective Justification

Following cryptocurrency crashes, many users expressed regret. Examples of common phrases after the Terra Luna crash include: "20% returns, virtual risk-free? The term 'too good to be true' is a massive understatement," "whenever I hear about such high returns, alarm bells go off in my head. To pay out that much, there has to be some sort of 'robbing Peter to pay Paul' sort of stuff going on," and "To this day, the most valuable lesson anyone has taught me was when my dad told me 'If something looks too good to be true, it probably is.'" Some of these sentiments are shown in Figure 3:

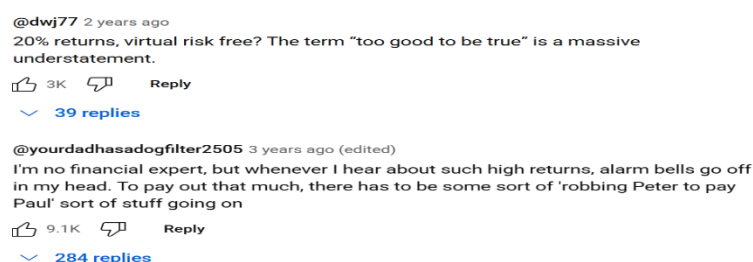


Figure 3: Users expressing regret, disillusionment, or attempts to justify past actions [24].

4.6 Event Comparison Summary

While the five themes discussed above were prevalent across all three case events (Dogecoin 2021, Terra/LUNA 2022, and Bitcoin rebound 2024), their expression and intensity varied. Dogecoin 2021 exhibited high FOMO, a heavy reliance on celebrity endorsement and euphoric optimism. In the 2022 Terra/LUNA, there was rapid emotional contagion and panic, followed by post-event regret and the 2024 Bitcoin rebound exhibited mixed sentiments with cautious optimism, renewed influencer trust, and hesitant group re-entry. This variation emphasises that herding behaviour is contextual. Timing, digital settings, and perceived confidence in social cues all influenced how the psychological mechanisms at play manifested, even if they stayed the same.

5. Discussion

From the results above, it is clear that emotionally charged social cues, imitation, and digital crowd dynamics drive herding behaviour among cryptocurrency investors. The five themes identified above (FOMO, emotional contagion, influencer reliance, collective rationalisation of risk, and post-herd regret) clearly demonstrate behaviour that both validates and expands upon current herding theories.

To begin with, Bikhchandani, Hirshleifer, and Welch's theory of informational cascades, as earlier explained, is consistent with the results obtained in this study [13]. After observing the activities of others, traders often abandoned their private judgment to follow the lead of others. This behaviour was particularly pronounced during panic-driven sell-offs and euphoric surges.

Similarly, the prospect/ loss aversion theory by Barberis, suggesting that traders are more averse to losses than they are attracted to gains, holds true in light of the results above [15]. Traders became risk-takers during price increases, particularly following previous gains. On the other hand, losses like the LUNA crash led to risk aversion, market withdrawal, and retroactive rationalisation. This oscillation is consistent with the theory's description of how people respond asymmetrically to wins and losses, motivated more by their perceived utility than by actual odds.

Finally, people who trade emotionally and follow influencer advice blindly demonstrate noise trading, which was identified earlier as influencing behavioural trading strategy design and leading to herding behaviour in cryptocurrencies. In Image 1's comment section, the masses hardly questioned the authority of influential figures, with some even perceiving these individuals to have insider knowledge or foresight. Following trends in this way causes volatility in crypto asset prices that affects even well-informed and professional traders. According to Alfieri et al., since noise trading might draw the most inexperienced traders, this means that the more volatility there is in the market price of a certain security, the more noise there is likely to be connected with it [17]. Thus, with the growing influence of public figures and social media platforms, it is important to highlight authority bias and digital social proof in the decisions investors make. With sites like Reddit and Twitter amplifying emotion and belief and making the contagion effect more immediate and widespread, it is important that behavioural economists continue to caution investors against over-reliance on heuristics. With the number of social media users only set to grow as suggested by Dixon in a *Statista* report, it is especially important that more research comes up on behavioural finance in digital platforms [25].

6. Conclusion

In conclusion, this study sought to fill a research gap in behavioural finance by examining herding behaviour among cryptocurrency investors and the role that digital platforms play in influencing behavioural trading strategy design and decision risk quantification. With a qualitative methodology the study collects 1000 text-rich entries in social media and forum posts (such as Reddit threads like r/CryptoCurrency and r/Bitcoin, Twitter/X posts around major market events and Telegram/Discord discussion transcripts), news articles and commentary (such as influencer blog posts, YouTube Transcripts and crypto news sites such as CoinDesk and CoinTelegraph), and case reports on past

herding events (e.g. Terra/LUNA collapse and Dogecoin hype). This data is collected using a purposive sampling strategy that selects texts published during periods of extreme volatility, such as during bitcoin crashes and meme coin surges between January 2021 and January 2025. Following a thematic analysis of this data, the results indicate that herding behaviour among investors is mostly caused by fear of missing out (FOMO), emotional contagion, influencer reliance, collective rationalisation of risk, and post-herd regret and justification. These social cues lead to investors relying on them to value cryptocurrency assets instead of conducting fundamental analysis, which would be beneficial. FOMO was the most prevalent of the five themes, with 84% of investors making investment decisions due to the fear of missing out. By answering these questions, this study contributes to the field of behavioural finance by offering insights on the real-time impacts of algorithmic trading, news flows, and social media sentiment on the digital assets market. New research should include the real-time impacts of algorithmic trading, news flows, and social media sentiment bearing on the digital assets market. Despite the previous research mostly focusing on past price and volume data. Filling up these gaps could improve the prediction ability of herding models and provide a more sophisticated knowledge of behavioural trading in cryptocurrency markets.

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