International Journal of Innovative Research and Scientific Studies, 8(1) 2025, pages: 1412-1420

IJIRSS
International Journal of Innovative Research & Scientific Studies

ISSN: 2617-6548

URL: www.ijirss.com

The correlation between herd behavior and fear of missing out in the Vietnamese security market

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Abstract

This research investigated the correlation between herd behavior and the fear of missing out (FoMO) in Vietnam's security market, focusing on their combined impact on investor decisions and market stability. The authors used a survey of 212 individual investors whose data were collected through a questionnaire, with responses measured on a 7-point Likert scale from March 2024 to April 2024. Additionally, the article applied Spearman's rank correlation coefficient to assess the relationship between these two behaviors. The findings demonstrated a significant positive correlation between herd behavior and FoMO. Investors who had a tendency for FoMO were more likely to follow herd behavior, especially during volatile markets; these behaviors tend to occur together. In conclusion, the article not only emphasized the importance of controlling psychological biases to enhance market stability but also addressed these behaviors that can help minimize speculative bubbles. The results of this research have important implications for improving Vietnam's stock market efficiency and competitiveness. By recognizing potential biases that may influence their investment decisions, investors can adopt different strategies to mitigate the impact of such biases on their financial outcomes.

Keywords: Correlation, Fear of missing out, Herd behavior, Vietnam security market.

DOI: 10.53894/ijirss.v8i1.4639
Funding: This research is supported by Banking Academy of Vietnam.
History: Received: 17 December 2024/**Revised:** 27 January 2025/**Accepted:** 6 February 2025/**Published:** 12 February 2025

Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
Publisher: Innovative Research Publishing

1. Introduction

In Vietnam, the security market plays a vital role as an effective channel for capital mobilization, which contributes to both medium- and long-term economic growth. Currently, this market is expanding at a remarkable pace, with total capitalization reaching approximately VND 4,740 trillion (USD 198 billion). Moreover, the market for unlisted public companies (UPCOM) is valued at about VND 1,036 trillion (USD 43 billion) [1]. Despite its development, investor behavior

in Vietnam is influenced by psychological factors, particularly herd behavior and FoMO. These behaviors are often most evident during volatile markets, such as the global financial crisis in 2008 and the COVID-19 pandemic. Herd behavior often leads investors to mimic the actions of others, while FoMO encourages hasty decisions. Such tendencies can worsen speculative bubbles and threaten market stability, as observed in Vietnam's stock market between 2016 and 2017. The aim of this study is to investigate the correlation between herd behavior and FoMO in the Vietnam security market, focusing on how these psychological factors can influence investor decisions. By addressing this topic, the research seeks to provide practical insights into mitigating the negative effects of these behaviors and fostering a more stable and transparent market environment. While previous studies have extensively explored herd behavior and FoMO separately, there is limited research examining their relationship. This study bridges this gap by evaluating their combined effects on market behavior. To achieve this, the following research questions are proposed: (1) What is the correlation between herd behavior and FoMO in the Vietnam security market? (2) How do these behaviors jointly affect investor decision-making and market stability? Addressing these questions contributes to the broader literature on behavioral finance and offers practical solutions to market instability. This study contributes to the field by offering empirical evidence of the relationship between herd behavior and FoMO in a developing market context, specifically Vietnam. Furthermore, the findings aim to guide policymakers and financial advisors in designing strategies to mitigate these psychological biases. The remainder of this paper is structured as follows: Section 2 reviews relevant literature, focusing on herd behavior and FoMO. Section 3 describes the methodology employed, including the use of Spearman's correlation. Section 4 presents the results and discussion, highlighting key findings and their implications. Finally, Section 5 concludes the study with insights, limitations, and suggestions for future research.

2. Literature Review

2.1. Herding Behavior

In financial markets, herd behavior is identified as the tendency of an investor to follow the actions of others. Devenow and Welch [2] identified two primary types of herd behavior: irrational herding and rational herding. In the context of the financial market, irrational herding occurs when investors follow the crowd without their own beliefs [3]. This behavior can lead to market inefficiencies, which contribute to the formation of speculative bubbles [8, 11]. Numerous empirical research studies have employed the CSAD (Cross-sectional absolute deviation of return) method developed by Chang, et al. [3] to study herd behavior in financial markets, which is an enhancement of the CSSD (Cross-sectional standard deviation of return) model by Christie and Huang [4]. Chang, et al. [3] further argued that herding behavior existed mostly in all markets and became even more noticeable during volatile markets. To investigate the presence of herd behavior in the U.S., Hong Kong, Japan, and Taiwan, the authors observed the dispersion of asset returns across the market over a certain period and investigated the nonlinear relationship between individual asset returns dispersion and market portfolio returns. The empirical results revealed evidence of herd behavior in advanced and Asian security markets, specifically in South Korea and Taiwan, while no such behavior was observed in the U.S., Hong Kong, and only partial evidence was found in Japan. The study also identified the presence of herd mentality in both bullish and bearish markets, particularly in Asia during the growth phase. This research indicated that crises played a significant role in triggering herd behavior and spreading it to neighboring countries.

In Vietnam, Thu [5] used the CSAD model to study herd behavior at the Hanoi Stock Exchange (HNX). With daily trading data of 130 random companies on the HNX from January 2013 to December 2017, the results showed that herd behavior existed in the Vietnam stock market, especially when the market fell; this behavior appeared most strongly. Herd behavior in the Vietnam security market is further demonstrated by Doan and Hoang [6]. In their research, the authors applied both the model of Chang, et al. [3] and GARCH regression methods to analyze the average dispersion of returns for stocks traded on the HoSE (Ho Chi Minh Stock Exchange) from June 2007 to November 2015. The results showed the same findings as in Thu's research, indicating that herd behavior existed in the Vietnam stock market, characterized by a negative regression coefficient with high statistical significance. Additionally, this behavior was more noticeable during market downturns.

2.2. Fear of Missing Out (FoMO)

Fear of Missing Out (FoMO) occurs when individuals fear missing opportunities, which drives them to participate in various activities and stay updated on what others are doing [7]. Therefore, FoMO can lead investors to make impulsive decisions to avoid missing out on opportunities, both socially and economically [8]. This psychological tendency has been linked to a notable increase in retail investors during periods of market uncertainty. Hershfield [9] showed that this surge can be attributed to FoMO, especially when market conditions are highly volatile. As a result, FoMO often leads to irrational decision-making and speculative bubbles. Morris [10] and Pichet [11]. Bo [12] observed that during market volatility, young investors' fear of missing out is influenced by risk aversion and their confidence in the market. Concerns about risk, social pressure, and lack of control in unstable markets influence the decisions of these investors [13].

2.3. The Correlation Between Herd Behavior and Fear of Missing Out

In the financial market, FoMO drives investors to mimic others' strategies because of the fear of missing profitable opportunities [14]. By collecting data from 323 investors in the Indian security market and analyzing it using SmartPLS, the authors investigated the impact of herd behavior on investment decisions and examined the mediating role of FoMO in this behavior. The findings revealed that the presence of FoMO intensified the impact of herd behavior on investment decisions, leading investors to prioritize following the crowd, especially when potential gains are threatened. Similarly, Kang, et al. [15] also discussed the mediating role of FoMO in herd behavior in investment decisions, encouraging investors to follow others'

actions. Güngör, et al. [16] used imagery in questions instead of text-based questions to prove that participants who were stimulated by images frequently experienced FoMO. However, exposure to financial data often mitigated this factor, suggesting that this data can reduce FoMO. On the other hand, Korawit and Nuangjamnong [17] found no relationship between herd behavior and FoMO in the market, particularly during the Covid-19 pandemic.

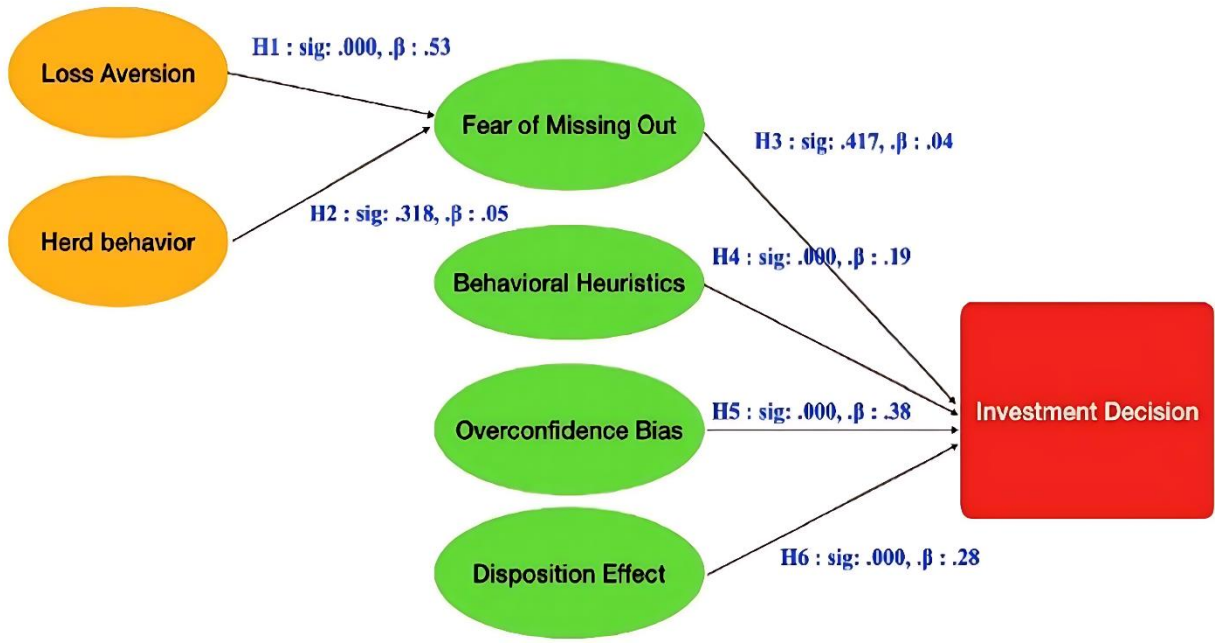

Figure 1.
Structural model results of behavioral biases and FoMO on investment decision-making in Thailand.
Source: Korawit and Nuangjamnong [17].

It is evident that while there has been substantial research on herd behavior and the fear of missing out (FoMO), studies specifically examining the correlation between these two phenomena are relatively limited, particularly in national literature, and often present conflicting viewpoints. Therefore, this study evaluates the relationship between these two behaviors using Spearman's correlation coefficient, with data collected from a survey of 212 investors gathered over a one-month period. Specifically, the study focuses on analyzing and identifying the bidirectional correlation between trading volume and the impact of these behaviors on investor psychology during various market phases. Spearman's rho is deemed an appropriate choice for assessing the strength and direction of the relationship between two variables measured on a Likert scale. This method allows for measuring the degree of correlation and determining the direction of changes between variables, which is particularly useful when working with data that does not require a normal distribution.

3. Research Methods

3.1. Research Process

The survey research conducted by the author followed a specific procedure, as outlined below:

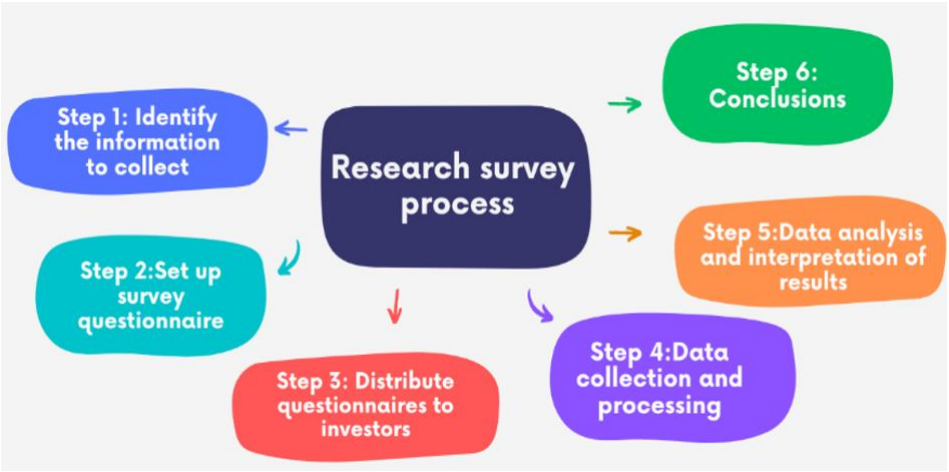

Figure 2.
Research survey process.

4. Research Methodology

This study employs a quantitative research approach to test the presence of these two behaviors and determine the relationship between herd behavior and FoMO in the Vietnamese security market. The research sample consisted of 215 randomly selected investors from the listed Ho Chi Minh City Stock Exchange (HOSE). Although all questionnaires were collected, three were discarded due to invalid responses. Therefore, the authors analyzed and processed 212 valid questionnaires. The primary data were collected through a survey of 212 individual investors between March 15, 2024, and April 21, 2024. The survey included 16 questions, divided equally to investigate the impact of herd behavior and FoMO. The responses were measured by a 7-point Likert scale, where a score of 7[1] in both categories indicates strong herd behavior and fear of missing out (FoMO).

Table 1.
Analysis of the impact of herd behavior and the fear of missing out.

Section I. Investigating the impact of herd behavior	
Question	Information regarding the questions.
Question 1	In the event of a significant market downturn, you may be influenced to sell assets despite having a long-term investment plan.
Question 2	During the investment process, you may be easily swayed and feel pressured by the investment decisions of others.
Question 3	You often consider the actions of other investors to be more critical to your investment decisions than conducting independent research.
Question 4	You prefer to invest in stocks in which colleagues and relatives have already invested.
Question 5	You frequently analyze the preferences of a company's customers before investing in that company's stocks.
Question 6	You monitor market trends whenever you purchase any stocks.
Question 7	When market indices experience a sharp increase, you may feel pressured to invest immediately.
Question 8	Making investment decisions that differ from those of the people around you can cause feelings of anxiety.
Section II. Examination of the Impact of Fear of Missing Out	
Question 1	You decided to purchase a stock solely because you feared missing out on potential gains, without thoroughly researching the investment's potential and risks.
Question 2	You encountered a situation where you lost control and purchased assets at high prices due to the fear of missing out on an opportunity.
Question 3	You find it difficult to resist the urge to frequently check your investment portfolio, even when you are aware that there may not be any significant changes.
Question 4	You feel anxious when you are not updated on the latest news and trends in the security market.
Question 5	You want to receive immediate updates on the performance and trends of the stocks in which you have invested.
Question 6	You are concerned about not being informed about news or developments that could impact your investment portfolio.
Question 7	Missing an investment opportunity can make you feel uneasy.
Question 8	You tend to sell stocks when negative news impacts the market's downturn.

The first objective consists of eight questions designed to examine the impact of herd behavior on investor decision-making. The section focuses on assessing the herd behavior of investors to gather and identify key factors influencing investment decisions. Moreover, this objective aims to directly evaluate whether participants make their own investment decisions or are influenced by the decisions of people around them, such as relatives, family, friends, or other investors in the market. The survey also seeks to determine if investors make buy or sell decisions in the absence of sufficient information.

The second section of the study focuses on the impact of the fear of missing out (FoMO) on participants. Eight questions are posed to assess the extent to which FoMO influences investment decisions when faced with the rapid pace of security market transactions. It further evaluates whether reliance on FoMO leads to negative consequences for investors or affects market stability. Additionally, it addresses whether FoMO might cause investors to hold unsuitable stocks without achieving profitable returns.

4.1. Research Methodology for Analyzing the Correlation Between Herd Behavior and Fear of Missing Out

The Spearman's rank correlation coefficient (Spearman's rho) [18] was chosen to evaluate the strength and direction of relationships between two variables on an ordinal scale. The Spearman correlation is calculated using the following formula:

$$r_s = \frac{\sum(R_i - \bar{R})(S_i - \bar{S})}{(\sum(R_i - \bar{R})^2 \sum(S_i - \bar{S})^2)^{0.5}}$$

[1] The 7-point Likert scale includes the following levels: (1) Strongly Disagree; (2) Disagree; (3) Slightly Agree; (4) Neutral; (5) Somewhat Agree; (6) Agree; (7) Strongly Agree.

Where: (1) Ri represents the i-th value of factor R; (2) Si denotes the i-th value of factor S; (3) $\bar{R}$ is the mean value of factor R; (4) $\bar{S}$ is the mean value of factor S.

The Spearman rank correlation coefficient derived from the above formula ranges from [-1, 1], indicating the direction and strength of the relationship between the two factors under study. A negative value signifies a negative correlation between the factors, while a positive value indicates a positive correlation. The reliability of the Spearman correlation coefficient will be assessed based on the t-distribution. The research team proposes the following hypothesis for examining the correlation between herd behavior and the fear of missing out (FoMO):

H_0: rs = 0, indicating no monotonic relationship between the two factors of herd behavior and the fear of missing out (FoMO).

H_1: rs ≠ 0, indicating that a monotonic relationship exists between the two factors: herd behavior and the fear of missing out.

Since the study employed primary data collected through a Likert scale to assess herd behavior and fear of missing out (FoMO), the average response scores within each category were computed to represent these factors in alignment with the assumptions of Spearman's correlation. This research contributes to the existing literature by concentrating on the Vietnamese security market. While previous studies relied on regression analysis, this study uses Spearman's correlation to show the relationship between herd behavior and FoMO. This method ensures that the results are tailored to the context of the Vietnamese stock market. These findings provide critical insights into the psychological drivers behind investment decisions in Vietnam's dynamic and rapidly expanding security market.

5. Empirical Results

5.1. Reliability of the Survey Using Cronbach's Alpha coefficient

To test the correlation among the questions of the two categories of herd behavior and FoMO, the authors employed Cronbach's Alpha to evaluate the reliability of the variables and the validity of the questions. The results of the Cronbach's Alpha test for the two sets of questions are as follows:

Table 2.
Results of reliability testing using Cronbach's Alpha.

Factors	Number of questions	Cronbach's Alpha value	Results
Herding behavior	8	0.7889	Reliability
FoMO	8	0.9320	Reliability

The questions related to FoMO exhibit high reliability, with a coefficient of 0.932. In contrast, the reliability of the questions concerning herd mentality is lower, with a coefficient of 0.7889. Nonetheless, this level of reliability still exceeds the commonly accepted threshold of 0.7.

5.1. Demographic Statistics

The research team employed descriptive statistical methods to evaluate the demographic distribution of a total of 212 respondents. The study collected information on gender, age, occupation, monthly income, portfolio value, and the average holding period of investment stocks. The collected data were then synthesized and presented as follows:

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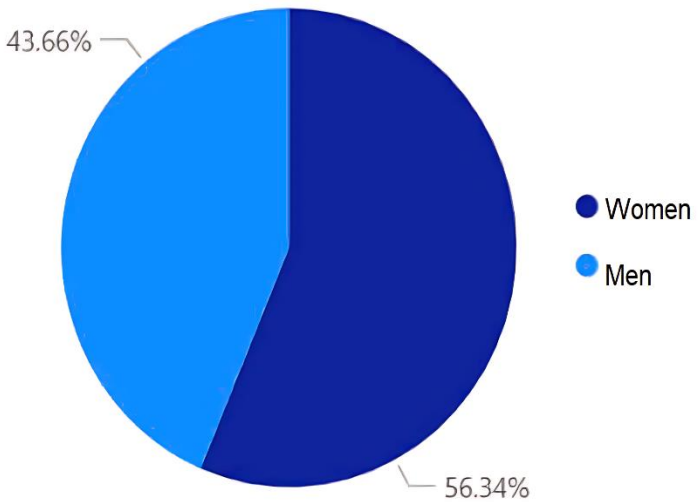

Figure 3.
Gender statistics.

According to the demographic statistical chart on gender collected from the survey, the group of female investors who participated in the survey exceeded the number of male investors by 12.68%. However, since the questionnaire was randomly distributed to a group of security market investors, it is not yet possible to conclude which gender group is more susceptible

to herd behavior and the fear of missing out. Recent studies [14, 19] indicate that female investors are more likely to be influenced by emotional factors like FoMO, potentially leading to a higher propensity for herd behavior. In contrast, other studies by Tarjanne [20] suggest that there are no differences regarding herding.

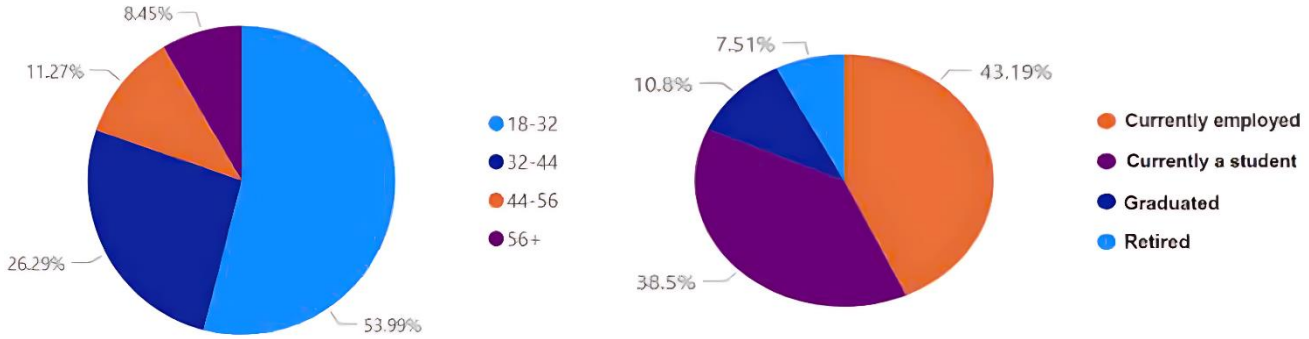

Figure 4.
Statistical overview of age groups and occupations.

The survey results indicate that the majority of participants are under the age of 44, as they have accumulated sufficient capital after years of working. This group tends to focus on short-term investments in the security market to generate additional income. Conversely, individuals aged 44-56 and those over 56 years old show less interest in long-term stock investments, preferring to opt for savings or lending instead. Additionally, because the survey primarily attracted younger respondents (18-44), the most represented occupations were students and working professionals. This aligns with findings by Viswanathan and Jain [21], who found that millennials (those aged 28-44) tend to make long-term decisions more frequently. They also noted that this age group is more likely to consult friends and family when making such decisions, which may contribute to higher levels of herd behavior. Additionally, herd behavior among millennials may be linked to their experience of FoMO and their difficulty in fully considering the potential consequences of their actions [15, 19, 21].

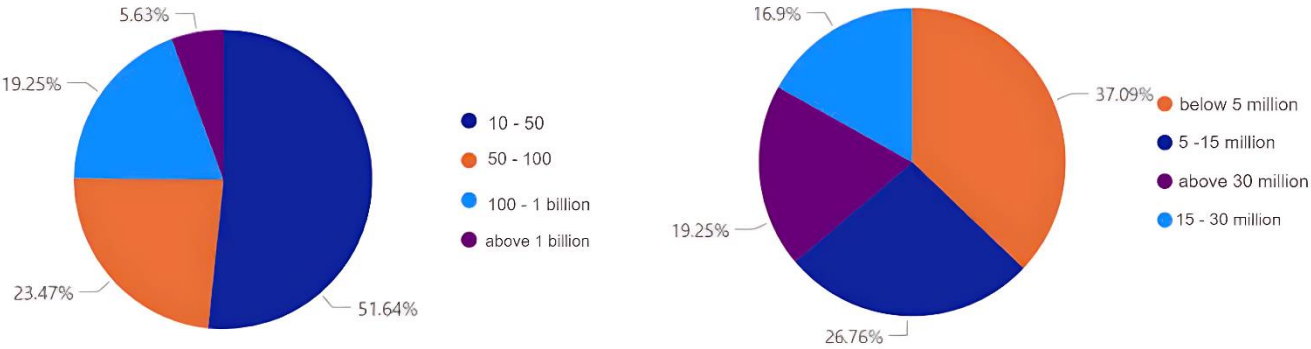

Figure 5.
Statistical overview of investment levels and income.

The survey primarily targeted individuals aged 18-32, a demographic characterized by youth and limited work experience. Consequently, the majority of reported investment amounts ranged from 10 to 50 million VND, accounting for over half of the total data. In contrast, investment portfolios exceeding 1 billion VND represented only 5.63% of the sample. This distribution reflects the income levels of the survey participants, with the majority earning around 5 million VND, indicating that many respondents are students or recent graduates with limited financial accumulation.

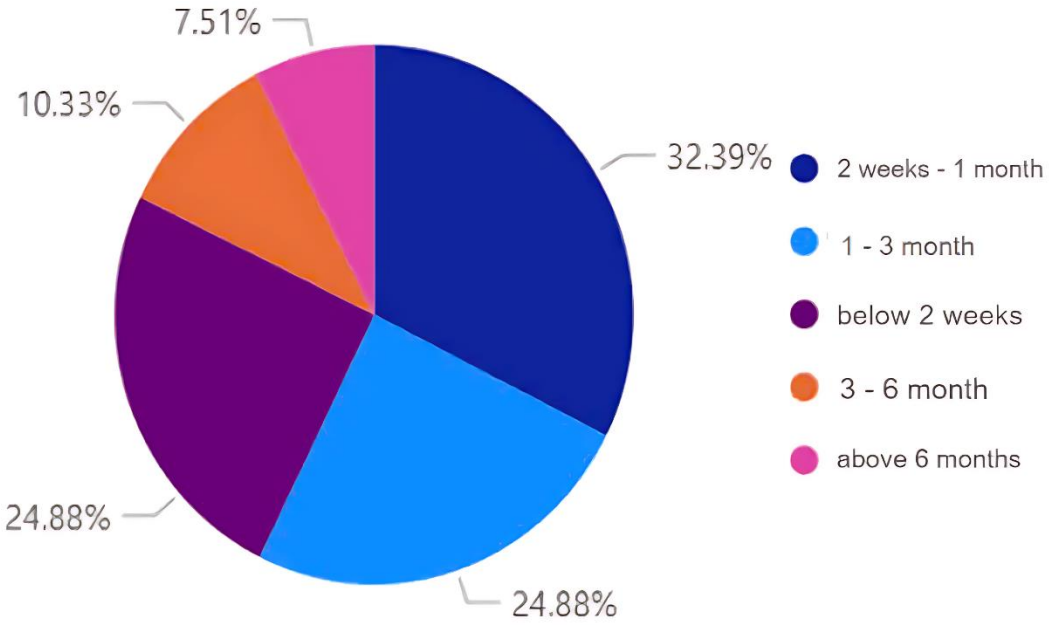

Figure 6.
Statistical analysis of the holding period for stock investments.

Finally, the demographic chart on stock holding periods indicates that the majority of investors allocate their idle funds into stocks for short-term investments, typically less than three months. This finding suggests that the surveyed group of investors does not habitually engage in long-term investing with the intention of saving. These results align with recent findings by Thu [5], who also observed that most investors tend to focus on short-term investments, which somewhat implies a speculative situation in the market.

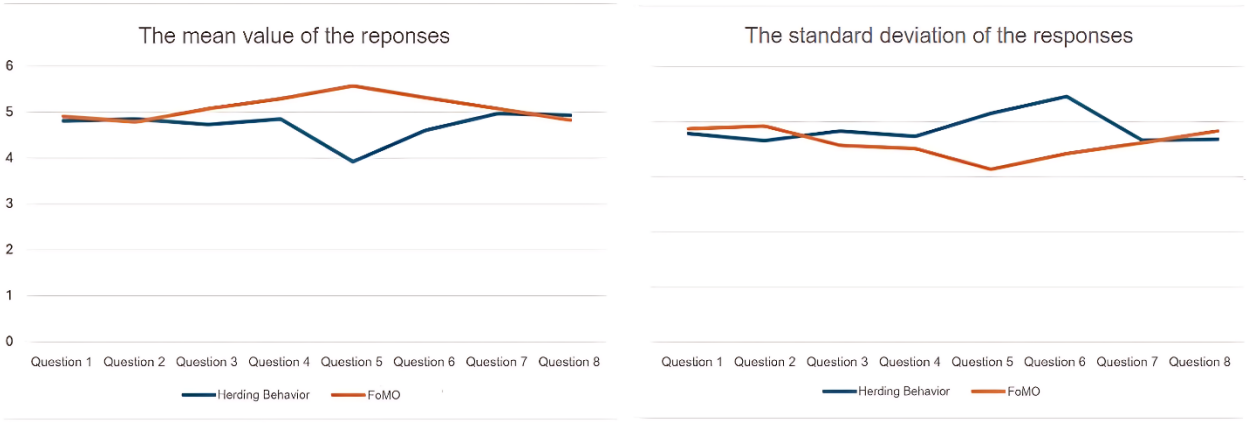

Figure 7.
The mean values and standard deviations of survey responses regarding the impact of herd behavior and fear of missing out (FoMO) on investors in the Vietnamese securities market.

5.2. Response Statistics

The analysis of the mean values and standard deviations of responses to two sets of questions assessing the extent of herd behavior and fear of missing out (FOMO) among investors reveals the following results: Seven out of eight responses to questions in Section I - The Influence of Herd Behavior on Investors and all eight questions in Section II - The Influence of Fear of Missing Out (FOMO) on Investors had mean values exceeding 4, indicating a tendency towards agreement. This suggests a significant presence of both herd behavior and FOMO among the 212 surveyed participants. The standard deviations of the responses, ranging from 1.569118 to 2.230654, also indicate considerable variation in the degree of these behaviors across different individuals.

5.3. Assessing The Correlation Between Herd Mentality and The Fear of Missing Out Using Spearman's Correlation

A preliminary assessment using the scatter plot indicates a positive relationship between the two factors. Specifically, respondents who exhibit herd behavior are also likely to experience a fear of missing out. This monotonic relationship between the two variables justifies the application of the Spearman correlation method.

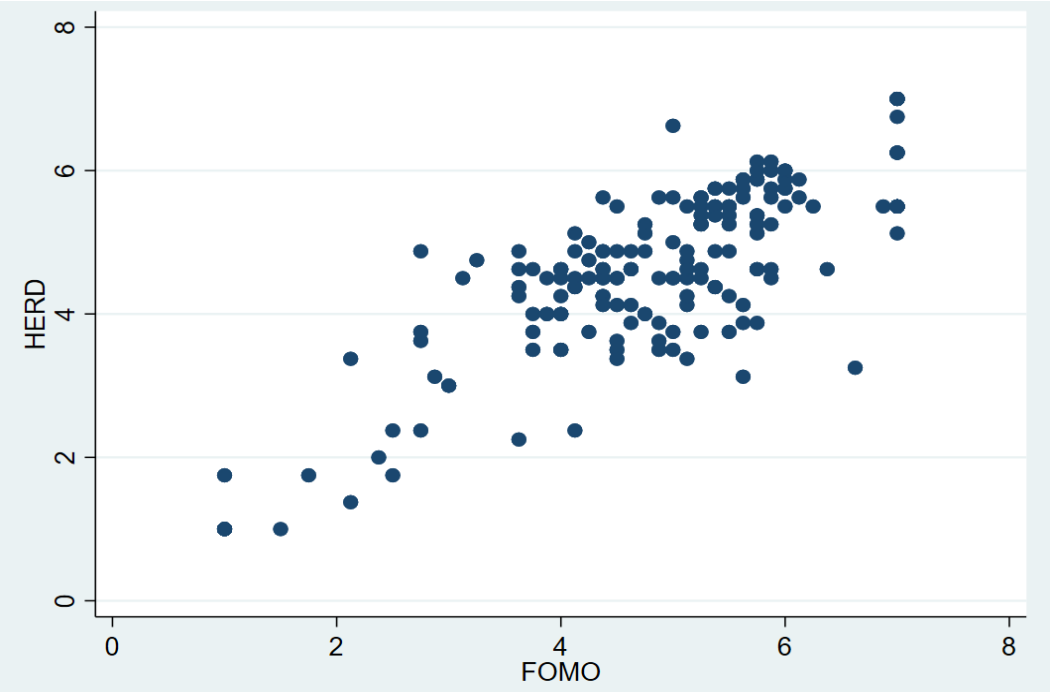

Figure 8.
Scatter plot assessing the correlation between herd behavior and fear of missing out using spearman's correlation coefficient.

The results of the Spearman rank correlation analysis between herd behavior and fear of missing out (FoMO) reveal a strong positive correlation between these two factors. This indicates that investors influenced by FoMO are also affected by herd mentality, with the correlation being significant at the 1% level. Consequently, we reject the null hypothesis (H0) and accept the alternative hypothesis (H1) of this test, affirming the existence of a monotonic relationship between herd behavior and FoMO. This positive correlation suggests that FoMO and herd behavior tend to increase or decrease together.

Number of obs = 213
Spearman's rho = 0.7480
Test of Ho: HERD and FOMO are independent.
Prob $> |t| = 0.0000$

In general, the participants in this study display a marked tendency toward herd behavior and a fear of missing out (FoMO), rather than maintaining a neutral position. These two behaviors are found to be positively correlated, suggesting that an increase in one behavior tends to strengthen the other. Specifically, investors who experience a fear of missing out on investment opportunities are more likely to be influenced by prevailing market trends. This aligns with recent research by Gupta and Shrivastava [14] and Kang, et al. [15] who also reported a significant positive relationship between these two behaviors among stock market investors. The Spearman correlation coefficient between herd behavior and FoMO, being near 1 and demonstrating high reliability, further highlights the robust connection between these two tendencies.

6. Conclusion

In the context of Vietnam's stable political and economic environment, the inflation rate has been maintained below 4% for over a decade, complemented by efforts from the banking sector to reduce interest rates in support of businesses and the economy [22]. However, global economic instability and internal changes by domestic enterprises can negatively impact investor behavior. When the market is influenced by those factors, herd behavior and FoMO among investors may increase, reflecting a stronger correlation between these two behaviors. For the Vietnam securities market, a positive correlation between herd behavior and FoMO has a dual impact, which can both restrain and stimulate the development of the market. These behaviors can increase liquidity, attract new investors, and boost trading volume in the short term. Conversely, they can contribute to market volatility, thereby limiting long-term investment flows or pushing investors towards assets that do not reflect their true value. Therefore, this study becomes more relevant in examining the correlation between these two behaviors. Results of this study reveal that there is a relationship between herd behavior and FoMO, and the positive correlation suggests that FoMO and herd behavior tend to increase or decrease together.

6.1. Limitations of the Study

The sample size of 212 participants only in the Ho Chi Minh Stock Exchange may not fully represent the diversity of investors in the Vietnamese stock market. A larger sample could provide a more comprehensive understanding of the relationship between herd behavior and FoMO. Additionally, the study relies on self-reported data, which may be subject to biases.

6.2. Further Study

Future research could address these limitations by using a larger sample of investors, such as those from different regions of Vietnam. Moreover, besides some criteria like gender, age, income, etc., further studies can use educational background, cities, etc.

6.3. Implications

In Vietnam's security market, managing behaviors such as herd behavior and the fear of missing out (FoMO) is essential to foster a stable and transparent investment environment. Therefore, investors should prioritize evaluating their decisions instead of following market trends driven by group behavior. Additionally, adopting long-term investment strategies can promote financial stability, especially during volatile markets. Furthermore, financial analysts can help identify and address these biases by analyzing market trends and distinguishing investment opportunities to guide investors toward more rational and evidence-based choices. Regulatory authorities should concentrate on developing an effective market supervision system to reduce administrative interventions. Moreover, the Ministry of Finance and the State Securities Commission should review and adjust legal policies, considering the psychological and emotional impacts on investors to ensure the stability and growth of Vietnam's security market and minimize the negative effects when herd behavior and FoMO occur simultaneously.

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