

Fear of missing out and Generation Z's investment behavior in Vietnam's stock market: The moderating role of financial literacy

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Abstract: This study investigates the impact of the Fear of Missing Out (FOMO), specifically across group, individual, and influencer dimensions, on the investment behavior of Generation Z in Vietnam, while examining the moderating role of financial literacy. Utilizing a large-scale survey of 5,441 Gen Z investors and employing the PLS-SEM model, the research analyzes the interaction between psychological drivers and financial capability, showing that FOMO dimensions significantly drive impulsive investment decisions, with media influencers exerting the strongest impact. Crucially, the results demonstrate that personal financial literacy, at both basic and advanced levels, plays a negative moderating role, effectively shielding young investors from the adverse effects of FOMO. The study concludes that while psychological biases are prevalent in emerging markets, financial knowledge is a vital mechanism for rationalizing investment behavior. These insights imply a critical need for educational institutions and market regulators to develop targeted financial education programs and market supervision strategies to foster sustainable investing among the digital generation.

Keywords: Financial literacy, FOMO, Generation Z, Investment behavior, PLS-SEM.

1. Introduction

Behavioral finance, a field integrating economics and psychology, posits that individuals' financial decisions are not always rational but are often influenced by emotional factors and cognitive biases [1, 2]. In the context of increasingly digitized and democratized financial markets, the participation of young investors, particularly Generation Z, who were born between 1997 and 2012, has become a significant driving force [3]. In Vietnam, the surge of "F0" investors (new investors) during the 2020-2022 period, predominantly young individuals, significantly increased market liquidity but also exposed risks stemming from emotional investment behavior [4].

One of the most prominent psychological biases affecting Gen Z is the fear of missing out (FOMO), defined as "a pervasive apprehension that others might be having rewarding experiences from which one is absent" [5]. Due to their frequent exposure to social media, Generation Z is easily influenced by success stories and investment recommendations from peers or key opinion leaders (KOLs), leading to hasty investment decisions to avoid being "left behind" [6]. Numerous studies have demonstrated a link between FOMO and risky investment behaviors such as herding [3] and excessive trading [7].

However, the role of personal financial literacy in mitigating the negative impact of FOMO remains a topic of debate. Some research suggests that high financial literacy helps investors make more rational decisions and be less influenced by emotions [8, 9]. Conversely, other scholars argue that even knowledgeable investors can be swayed by deep-seated psychological biases [10]. In Vietnam, although there are some studies on investor behavior, no comprehensive work has deeply analyzed the multidimensional impact of FOMO, including group, individual, and media sources, on the investment

behavior of Gen Z, nor has any tested the moderating role of different levels of financial literacy in the relationship between FOMO and their investment behavior.

To address this research gap, we conducted a large-scale quantitative study with 5,441 Gen Z investors in Vietnam. This study aims to: (1) assess the impact of three dimensions of FOMO, including FOMO_Group, FOMO_Individual, and FOMO_Influencers, on the investment behavior of young Gen Z individuals, and (2) examine the moderating role of personal financial literacy at two different levels, basic and advanced, in this relationship.

This research offers several important contributions.

First, academically, it is one of the first studies in Vietnam to provide empirical evidence on the multidimensional structure of FOMO and its impact in an emerging market, where herding behavior and social influence are extreme.

Second, the study clarifies the moderating mechanism of financial literacy, showing that even basic knowledge can serve as an effective "shield" against FOMO.

Third, in practical terms, the research findings provide a solid foundation for policymakers, educational institutions, and financial firms to develop appropriate intervention strategies to enhance financial capability and protect young investors.

The remainder of this paper is structured as follows: *Section 2* presents the literature review and hypothesis development. *Section 3* describes the research methodology. *Section 4* presents and discusses the analysis results. Finally, *Section 5* offers conclusions and policy implications.

2. Literature Review

2.1. Fear of Missing Out (FOMO) and Investment Behavior

FOMO was initially described in a marketing context [11] but was later popularized in social psychology, especially with the rise of social media [5]. In the financial domain, FOMO drives compulsive and impulsive investment decisions, as investors fear missing out on profits others are enjoying [12]. Based on a theoretical overview, this study examines FOMO through three dimensions: herd behavior-driven FOMO (FOMO_Group), individual psychology-driven FOMO (FOMO_Individual), and media influence-driven FOMO (FOMO_Influencers).

2.1.1. Herd Behavior-driven FOMO (FOMO_Group)

Originating in the Theory of Herding Behavior [13], this behavior occurs when investors mimic the actions of a large group, assuming the majority has better information or seeks to minimize the risk of deviating from the consensus [14]. For Generation Z, pressure from friends and online investment communities is a primary driver of this type of FOMO.

This syndrome particularly affects non-professional investors, making individuals more inclined to focus on others' investment decisions, envy their profits, and subsequently trade in related markets to avoid missing out on potential gains [12, 15, 16]. Moreover, some studies imply that their perceived analytical skills may not be as strong as they believe, as many mental shortcuts and factors from other investors can influence them [17]. Therefore, the research team hypothesizes that:

"H₁: FOMO_Group has a positive impact on the investment behavior of Generation Z".

2.1.2. Individual Psychology-driven FOMO (FOMO_Individual)

This stems from investors' internal biases, mainly loss aversion and overconfidence. Prospect Theory, as articulated by Kahneman and Tversky [2], suggests that the pain of a loss is greater than the pleasure of an equivalent gain, causing investors to fear "missing an opportunity" as if it were a real loss [2]. Concurrently, overconfidence leads them to overestimate their predictive abilities, resulting in risky trading and a tendency to overlook risks [18].

Numerous studies have shown that loss aversion intensifies an individual's fear of missing out, negatively impacting investment behavior [19-22]. On the other hand, FOMO behaviors driven by

overconfidence in one's abilities and predictions also significantly affect investors' decisions. Investors tend to trade more actively and frequently when they believe their market forecasts are favorable [7], leading to increased trading volume in the market, Daniel and Hirshleifer [23]. Inghelbrecht and Tedde [24] indicate that overconfident investors trade more aggressively than those with lower confidence levels and tend to invest in riskier assets compared to rational investors [24]. Thus, we posit that:

"H_s: FOMO_Individual has a positive correlation with the investment behavior of Generation Z".

2.1.3. Media Influence-Driven FOMO (FOMO_Influencers)

Social Media Theory [25] explains how individuals are influenced by information from key opinion leaders (KOLs) and media channels. In the digital era, Gen Z primarily consumes investment information through platforms like YouTube, TikTok, and Facebook. Recommendations from "finfluencers" can trigger mass buying or selling waves, regardless of whether the information is verified [26].

For the most part, decision-making driven by impulsivity due to social media influence is motivated by immediate rewards. Consequently, FOMO behavior stemming from social media and influential figures is often associated with poor planning and a lack of deliberation [27, 28]. Research by Zhao and Li [26] shows that financial influencers are one of the factors affecting Millennials and Generation Z in their decision-making, especially regarding money management and the selection of investment products [26]. On this basis, the third hypothesis proposed by the research team is:

"H_s: FOMO_Influencers increase the investment behavior of Generation Z".

2.2. The Moderating of Financial Literacy

Financial literacy is defined as the combination of knowledge, skills, and confidence to make effective financial decisions [29]. Numerous studies have confirmed the positive role of financial literacy in improving saving, investment, and retirement planning behaviors [8]. About behavioral biases, financial literacy is expected to act as a "filter," helping investors recognize and control emotional decisions [9]. Specifically, individuals with financial knowledge are less likely to blindly follow the herd, are better at objectively assessing risk, and can distinguish credible information from rumors on social media.

This study differentiates financial literacy into two levels: basic (understanding concepts like interest rates, inflation, risk) and advanced (ability to analyze financial statements, value assets), to assess the moderating role in more detail and to clarify the hypothesis that:

H_s: Financial literacy at both basic and advanced levels affects the relationship between FOMO and investment behavior.

3. Model and Methodology

3.1. Data

The data used in this study were collected and processed from primary sources through two methods: in-depth interviews and survey questionnaires. The questionnaire was designed on the Google Forms platform and employed a 5-point Likert scale, ranging from 1 ("Strongly disagree" - the lowest level) to 5 ("Strongly agree" - the highest level), to measure the agreement level of participants regarding the relationships proposed in the research.

The study targets Generation Z, who were born between 1997 and 2012, in Vietnam, and who have previously invested in or are currently investing in at least one type of asset. A non-probability convenience and snowball sampling method was used, with the questionnaire disseminated through social media and investment forums. After a screening process to remove invalid responses (incomplete, inconsistent answers), the final dataset comprised 5,441 valid observations for analysis.

3.2. Model

The author adapts the research model developed by Lusardi, A. et al. cite_start, incorporating the moderating role of financial literacy, which has been further developed and supplemented to suit the research context in Vietnam. The research team constructed a model with three sub-factors representing FOMO, including group-driven, individual-driven, and influence-driven factors. The moderating role of personal financial literacy is examined at two levels: basic and advanced. Additionally, to ensure the validity and reliability of the examined relationships, the author includes several control variables that may affect investment behavior, such as the economic environment, socio-cultural factors, and the income of the investors.

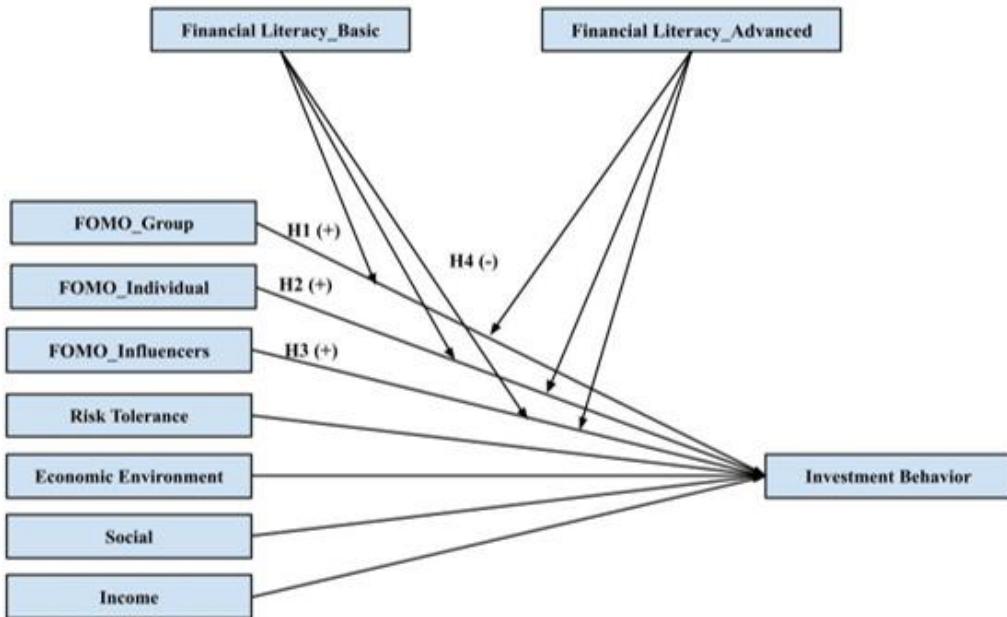


Figure 1.
Research Model.

The variables in the model are defined and detailed in Table 1.

Table 1.
Description and Definition of Variables.

Variable	Description	Expectation
Dependent Variable		
Investment Behavior	Generation Z's investment behavior in the stock market	
Independent Variables		
FOMO_Group	FOMO by the herd effect	(+)
FOMO_Individual	FOMO according to personal psychology	(+)
FOMO_Influencers	FOMO is influenced by social media.	(+)
Moderate Variables		
Financial Literacy_Basic	Basic level of financial literacy	(-)
Financial Literacy_Advanced	Advanced level of financial literacy	(-)
Control Variables		
Risk Tolerance	Risk tolerance for investment	(-)
Economic Environment	Economic environment for investment decision	(+)
Social	Social environmental factors	(-)
Income	Generation Z Investor Income	(-)

Source: Research group synthesis and proposal.

3.3. Methodology

To assess the impact of FOMO on the investment behavior of Generation Z in Vietnam under the moderating role of personal financial literacy, the research team employs the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique. This technique is used to test the relationships between latent variables through manifest variables. This method is highly suitable for this research as it allows for the analysis of complex models with multiple observed and latent variables, while also providing flexible estimation of complex relationships between variables without requiring the strict data distribution assumptions of classical SEM (CB-SEM). This is particularly important in the context of investment behavior research, where psychological and social factors often interact in a multidimensional and complex manner [30].

Furthermore, to ensure the reliability and explanatory power of the research findings, the team utilizes several related validation techniques, including Cronbach's Alpha, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and tests for multicollinearity, discriminant, and convergent validity to evaluate the resulting structural model.

4. Results and Comments

The quality and structural model assessments met the required standards, indicating that the results obtained from the PLS-SEM are reasonable, highly reliable, and statistically significant for interpretation. Therefore, the research team chose to explain the impact of FOMO on the investment behavior of Generation Z in the Vietnamese stock market, moderated by financial literacy, based on the regression results from the PLS-SEM, as illustrated in Figure 2 below.

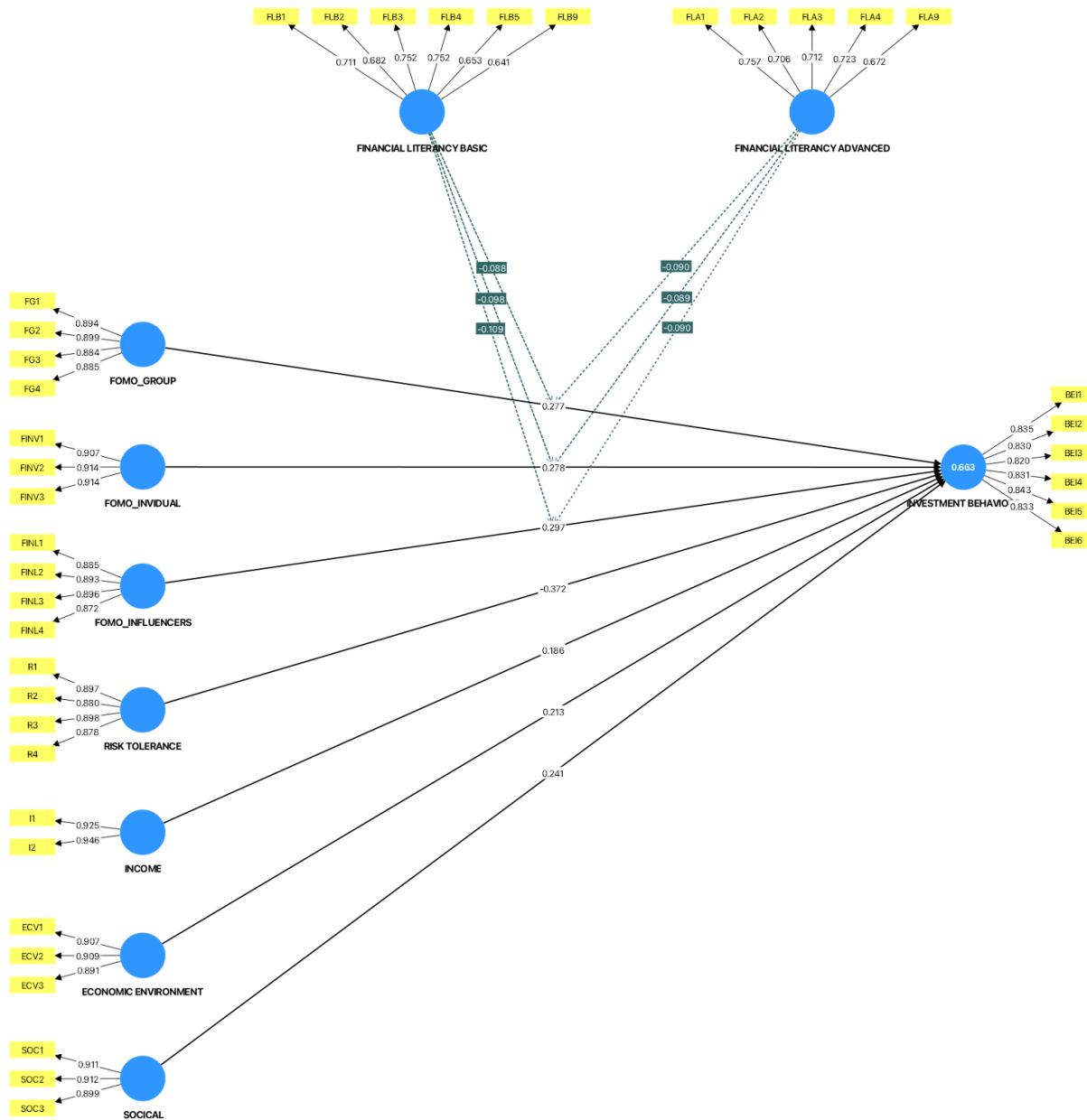


Figure 2.
Result of PLS-SEM Analysis.

Additionally, the author considered the change in the R-squared coefficient when an independent variable was removed from the model to assess its impact on the dependent variable. According to Cohen [31], f-squared values of 0.02, 0.15, and 0.35 correspond to small, medium, and large effects, respectively [31]. The effect sizes of the explanatory variables in the model are detailed in Table 2 below. The results show that most variables have a small to medium impact on the dependent variable, with only risk tolerance having a large effect.

Table 2.
Effect Size f^2 of variables.

	f-square	Level of Impact
Economic Environment	0.134	Low
Financial Literacy Advanced	0.168	Medium
Financial Literacy Advanced X FOMO_Group	0.026	Low
Financial Literacy Advanced X FOMO_Influencers	0.026	Low
Financial Literacy Advanced X FOMO_Individual	0.025	Low
Financial Literacy Basics	0.048	Low
Financial Literacy Basics X FOMO_Group	0.025	Low
Financial Literacy Basics X FOMO_Influencers	0.038	Low
Financial Literacy Basics X FOMO_Individual	0.030	Low
FOMO_Group	0.226	Medium
FOMO_Influencers	0.260	Medium
FOMO_Individual	0.228	Medium
Income	0.102	Medium
Risk Tolerance	0.408	High
Social	0.172	Medium

The research findings indicate that FOMO_GROUP has a positive linear relationship with investment behavior, with a coefficient of 0.277 at a 1% significance level, showing a considerable influence of herd behavior on FOMO. This result suggests that individuals influenced by herd effects tend to increase their investment activity, regardless of analytical factors or associated risks. When the psychological impact of FOMO from herd behavior increases by one unit, the investment behavior of Generation Z on the Vietnamese stock market increases by a corresponding 0.277 units. This is fully consistent with the initial research hypothesis and the findings of previous studies, which suggest that the herding effect and FOMO are mutually reinforcing, leading to irrational investment behavior [13, 14, 32].

Particularly for Generation Z, young people with high levels of connectivity to social media and online communities, the FOMO effect from the crowd becomes even stronger. In reality, the Vietnamese stock market, especially during the 2020-2022 period, saw a significant increase in F0 investors, particularly from Gen Z, due to the proliferation of stock market groups on social media, which fostered a herd mentality investment environment. Many young people enter the market based on "signals" from the community rather than on technical or fundamental analysis. This mindset accurately reflects the characteristics of FOMO_GROUP, the fear of being left behind while others are investing and seemingly succeeding, leading to impulsive and driven investment behavior. This situation is also notably reflected in the model, which shows a positive linear correlation of 0.241 at a 1% significance level between social factors and investment behavior, indicating that a positive social environment increases investment activity.

Regarding the moderating role of financial literacy, the results show that at a basic level, Financial Literacy_Basic has a negative moderating effect on the relationship between FOMO_GROUP and investment behavior, with a coefficient of -0.088 at a 1% significance level. This indicates that as the basic financial literacy of Gen Z investors increases, the impact of herd-driven FOMO on their investment behavior decreases. This is clearly explained by the fact that, with this level of understanding, investors can recognize the risks of "flocking" with the crowd and know how to question popular information rather than passively accepting it. The situation in Vietnam also demonstrates the role of basic financial education. In financial literacy training programs such as "Smart Finance with Gen Z" by the Ministry of Finance in 2022 or online courses organized by securities firms (SSI, VNDirect), young people equipped with basic knowledge have significantly reduced their tendency to invest based on sentiment or rumors.

When financial literacy is upgraded to an advanced level, research results show a distinct negative moderating effect, stronger than at the basic level, with an interaction coefficient of -0.090 at a 1%

significance level in the same relationship. This moderating effect is more profound as it involves the ability to analyze market data, evaluate investment assets, understand portfolio allocation, and use risk hedging tools. Individuals with advanced knowledge are generally not easily swayed by herd behavior. They are capable of independently analyzing investment information, using valuation tools like P/E, ROE, and RSI to make decisions, and thus tend to minimize the impact of herd-driven FOMO, which aligns with the evidence from the conclusions of Perotti and Zottel [33] and Gerrans et al. [34].

Furthermore, the moderating role of advanced financial literacy can also be explained through the control of risk tolerance in the model. The impact coefficient of risk tolerance is a large negative (-0.372) at a 1% significance level, indicating that as risk tolerance increases, investment behavior tends to decrease among Gen Z in Vietnam. This is an interesting finding and contrary to some traditional theories. This is because, unlike in developed markets, the majority of young investors in Vietnam still lack experience and advanced financial literacy. Consequently, those who are well-aware of the risks often choose to stay out of the market when they see volatility, especially after crashes like the one in 2022.

The results of the PLS-SEM analysis show that the variable FOMO_INDIVIDUAL has a direct impact coefficient of 0.278 on the investment behavior of Gen Z, with a statistical significance of 1%. This means that FOMO originating from personal psychological states and suggestions, such as fear of loss, overconfidence in predictive abilities, and lack of emotional control, has a significant positive influence on the investment behavior of Gen Z in Vietnam. This is a generation that frequently uses social media, is influenced by continuous information updates, and has a highly competitive mindset, making them highly susceptible to the feeling of "being left out of the profit game" when they see friends and acquaintances succeeding financially.

This is particularly relevant in the context of Vietnam, especially in major cities like Hanoi and Ho Chi Minh City, where Gen Z has high access to information and faces immense pressure for "early success," making individual FOMO more pronounced. Comparing oneself to friends, colleagues, or peers who have successful investments and share their profits on social media creates pressure on many young people, leading to trend-following investment behavior. The waves of investment in early 2021, speculative real estate in suburban areas, or the sharp rise of speculative stocks like FLC, ROS, or the public investment group are clear evidence that Gen Z in Vietnam is strongly influenced by FOMO. This situation also explains the significant positive correlation with a coefficient of 0.213 at a 1% significance level when assessing the impact of the economic environment on investment behavior, meaning that a positive perception of the economic environment increases investment activity. Gen Z investors tend to enter the market more when they believe the economy is recovering or stable [24]. On the other hand, alongside the control role of the economic environment in this relationship, income has a positive impact with a coefficient of 0.186 at a 1% significance level, indicating that higher income leads to higher investment behavior, consistent with the foundational hypothesis.

Personal financial literacy demonstrates significant moderating effects at both basic and advanced levels, with interaction coefficients of -0.098 and -0.089, respectively. This indicates that financial literacy plays a crucial role in mitigating the negative impact of internal FOMO. When individuals understand fundamental concepts such as compound interest, risk diversification, and the principles of saving and investing, they are better equipped to control their emotions and avoid impulsive financial decisions driven by fear of "falling behind." In Vietnam, the majority of Gen Z have not been exposed to formal financial education programs in school. Consequently, those with a basic understanding of finance often acquire it through self-study or from a family environment with good financial management traditions. For this group, individual FOMO may still exist, but it is not strong enough to lead to erroneous investment behavior. They tend to seek more information and ask "why should I invest?" before following the crowd. At a more advanced level, such as understanding financial reports, stock valuation, and technical analysis, young investors can objectively evaluate investment opportunities, thereby largely neutralizing the negative effects of individual FOMO. However, the moderating effect is smaller than that of basic financial literacy because, in Vietnam, the number of Gen

Z with advanced financial literacy is relatively limited, although it has been increasing in recent years due to the popularity of online finance courses and specialized investment communities on social media platforms. This group is typically not influenced by sentimental news and tends to use data for analysis before making decisions. Thus, advanced financial literacy helps transform FOMO into a positive motivator rather than a psychological pressure.

FOMO_INFLUENCERS is a type of fear of missing out stimulated externally, from the influence of celebrities, financial KOLs, reputable brokers, or "investment experts" on social media. This is one of the most powerful factors affecting Generation Z in Vietnam, which is a highly digital consumer and investor group that frequently accesses information via YouTube, Facebook, TikTok, and Telegram. This is once again demonstrated in the results of the PLS-SEM analysis, where this FOMO factor has the largest impact on investment behavior with a β value of 0.297 at a 1% significance level, affirming the strong influence of mass media and financial figures on the decisions of Gen Z. In reality, there are many cases of Gen Z going "all-in" on stocks like HAI, FLC, BII, or cryptocurrency tokens such as DOGE, SHIBA, etc., simply because KOLs shared their "potential for 10x returns," without conducting any analysis of intrinsic value or risk management. When financial KOLs and investment news sites "hype up" an opportunity, Gen Z often feels "left behind" if they do not participate.

When considering the role of personal financial literacy at both basic and advanced levels, the research team found positive and significant evidence. The interaction coefficient between FOMO_INFLUENCERS and basic financial literacy is negative and statistically significant, with a coefficient of -0.109, which is larger in magnitude than the interaction with FOMO_INDIVIDUAL. This demonstrates that a basic financial foundation helps individuals remain more discerning in the face of FOMO-inducing information from external sources, especially in the context of rampant fake news and market manipulation on social media. When investors can recognize the signs of trend-based investing, they will pause to verify information or choose to observe first, act later. This is because, in Vietnam, the number of Gen Z with basic financial knowledge is increasing, thanks to financial literacy programs from startups like Money Lover, Finhay, Infina, and positive financial literacy information on media channels, driven by the government's national comprehensive financial inclusion strategy.

Additionally, the interaction coefficient between FOMO_INFLUENCERS and advanced financial literacy remains negative (-0.090) and is statistically significant at the 1% level, but its moderating effect is considerably lower than that of the basic level. This can also be explained by the fact that in Vietnam, the number of young people in Generation Z with advanced financial literacy is still low, not enough to create a strong moderating pressure on these relationships. On the other hand, investors with quantitative skills such as PE/PB valuation, DCF modeling, and chart analysis techniques will not be easily "led" by unsubstantiated advice. They tend to ask critical questions and make decisions based on specific financial models. Notably, the group with advanced financial literacy is also capable of being "immune" to vague financial media campaigns, helping them not only avoid FOMO but also identify real value investment opportunities. This is extremely necessary in Vietnam, where the system for monitoring investment advice on social media is not yet well-developed, and individual investors are still easily influenced by the crowd.

5. Conclusion and Recommendations

Financial literacy plays a foundational role in building healthy investment behavior for Generation Z. The research results show that the Gen Z group has limited financial knowledge, primarily at a basic level, making them susceptible to the effects of FOMO. Therefore, enhancing personal financial literacy is considered a fundamental solution to help Gen Z make more rational investment decisions and minimize the influence of FOMO. Recommendations to improve financial literacy include:

First, strengthen the integration of financial education into the formal education system.

Second, develop robust online and interactive financial education programs for young people.

Third, encourage the organization of community campaigns and activities on finance to raise public financial awareness.

The FOMO mentality is proven to be one of the main causes of rushed and irrational investment decisions among Gen Z. The PLS-SEM model has quantified the negative impact of FOMO originating from social media, peers, and herd trends on the portfolio performance and risk tolerance of young investors. This requires proactive solutions to mitigate the impact of FOMO at both the individual and market levels. The following recommendations propose measures to help Gen Z investors better recognize and control their own behavioral biases, while also strengthening a transparent and safe investment environment to limit "bubbles" caused by rumors and herd effects:

First, enhance the provision of knowledge on financial behavior and emotional management for young investors from an early stage.

Second, improve market supervision and warning mechanisms to prevent negative "FOMO waves" from causing market volatility.

Third, strengthen risk control regulations for new investors in their transactions.

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.

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