HERDING BEHAVIOR AMONG NOVICE INVESTORS IN THE INDONESIAN STOCK MARKET

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Abstract

This research aims to understand the herding behavior of novice investors on the Indonesia Stock Exchange, as well as the influence of financial literacy and social referencing in controlling the herd behavior of novice investors. The research uses the Theory of Planned Behavior base model by including financial literacy and social referencing factors as external factors in the social learning process of individual investors. The research was conducted using an online survey approach of 215 investors on the Indonesian Stock Exchange. Respondents were beginner investors with low skills and compared them with experienced investors. The research variable instrument uses an instrument developed by previous research. Data were analyzed using Structural Equation Modeling the research results found that financial literacy had a negative effect on herding attitudes and control of herding behavior. Furthermore, attitudes, subjective norms and behavioral control influence herding intentions and behavior. Social referencing mediates the influence of herding intentions on herding behavior. The results of this research provide implications for the process of increasing investors' knowledge, experience and skills through financial literacy, social learning through social referencing.

Keywords: Herding Behavior, Theory of Planned Behavior, Financial Literacy, Social Learning Theory.

JEL Code: G41

1. INTRODUCTION

Individual investors in making investment decisions are not always rational, but often involve psychosocial aspects and are involved in a social learning process in building knowledge, experience and abilities. Follow-the-group behavior (herding mentality) is often considered negative behavior and impacts the efficiency of developing markets (Ah Mand & Ciri, 2021; Aslam et al., 2022; Shantha, 2019). However, herding behavior is not always detrimental, as it relates to the potential for developing experience through social learning and financial literacy in the digital era.

Apart from being detrimental, social influence also often provides benefits related to the wisdom of the crowd. Group references are not always detrimental, especially when the information environment is complex, uncertain or for novice investors with low information processing abilities (low skills) (Rossa et al., 2020) as explained in Social Referencing Theory (Chen et al., 2010). Collective decisions in the market are not always detrimental. when all agents tend to adjust their expectations to the expectations of one or more people or analysts. In general herding reduces market efficiency, but when each agent takes into account a plurality of opinions, thereby following the wisdom of the crowd, market dynamics can be efficient.

Based on stimulus-organism-response (Hazeltine & Schumacher, 2016), individuals process information from the external environment (Ajzen & Fishbein, 2010; Ajzen, 2005) as a stimulus, which is obtained through social learning that builds knowledge, experience and skills in the form of financial literacy, social referencing. Financial literacy is the ability to understand and apply various financial skills, such as in investment decisions (Adil et al., 2022). Social referencing is the seeking and use of information from other individuals to evaluate situations (Chen et al., 2010). Financial literacy and social referencing factors for clarify the influence factors of the social environment in the TPB. This is because investors in investing in general are not always alone, but some investors often use investment advisors and online investment services. Financial literacy is useful for developing financial understanding and skills to support more rational financial decisions.

Investors, especially novice investors with insufficient investment experience, often use investment advisors on online investment services. This is a form of social referencing. Studies in capital markets (Chen et al., 2010) show that investor preferences are not independent but depend on agents (brokers) and are socially formed, especially under conditions of uncertainty. Social referencing is the search for and use of information from other individuals or groups to evaluate a situation.

Brokers or stock brokers are at the forefront who will provide up-to-date information regarding securities market conditions and other related matters. Studies in the capital market (Chen et al., 2010) found the influence of social references on stock price bubbles. The study was carried out by correlating the indexes of the leading brokers in the US, namely Merrill Lynch and E*Trade, with the financial bubble in information technology stocks, also known as the internet bubble, which occurred at the beginning of the 21st century. The study found that the broker index was correlated with the information technology stock index (NASDAQ), namely an excessive increase in prices and a decrease that was accompanied by a fall in stock prices of information technology companies in the US in 1999-2001.

The importance of financial literacy has grown widely, with the increasing complexity of financial products. Over the past few years, the emergence of innovative financial products and instruments has encouraged individual investors to actively participate in financial markets. However, these financial products are highly complex instruments, which require investors to be financially literate for optimal investment selection and emerging investment avenues. Following this phenomenon, financial literacy has received great attention from researchers globally. Financial literacy to build financial knowledge and skills is useful for supporting more rational financial decisions in selecting, using, managing and allocating financial assets (Adil et al., 2022; Rasool & Ullah, 2020). Previous studies (Adil et al., 2022; Rasool & Ullah, 2020) found that financial literacy has a positive and significant impact on investment decisions. This study analyzes herding behavior using the TPB approach and includes external factors of financial literacy and social references as stimuli that influence the attitudes and behavior of individual investors.

2. LITERATURE REVIEW

2.1 Herding

Definitions of herding behavior vary. Some researchers define behavior based on the context of the research they conduct. Herding is defined as the phenomenon of individuals deciding to follow the behavior of other investors rather than deciding independently based on the personal information they have. In behavioral finance, herd mentality refers to the tendency of investors to follow and imitate what other investors do. Investors follow the group (corporatefinanceinstitute, 2022). Welch (Komalasari et al., 2021) states herding as a coordination mechanism among investors through some signal (for example, price changes) or the ability of investors to observe other decision makers directly, such as: colleagues. Meanwhile, several empirical studies define herding only as simultaneous trading, traded by investors who have the same information and imitate the actions of other investors.

Herding behavior has long been put forward by economist Keynes in the 1930s (Rook, 2006), however academically, the theory of herding behavior became popular in the 1990s, pioneered by Banerjee and Bikhchandani et al. (Komalasari et al., 2021). The phenomenon of herding mentality behavior known as "animal spirits" causes fluctuations in the economic balance cycle. According to Keynes, herding is a response to uncertainty that occurs due to the perception of individuals who do not have sufficient knowledge, so that individuals follow the group because they think that the group has better information. Herd behavior is individual behavior to reduce the risk of following a group and acting collectively. Evolutionary biologist W.D. Hamilton in 1971, in the article "Geometry For The Selfish Herd", asserted that each individual group member reduces danger to himself by moving as close as possible to the center of the group. The herd appears as a unit in moving together, but its function arises from the uncoordinated behavior of self-interested individuals.

2.2 Theory of Planned Behavior

Theory of Planned Behavior (TPB) (Ajzen, 1991) is one theoretical approach to understanding investor behavior. TPB theory (Ajzen, 1991) is a framework for studying behavior. Theory statement: Theory of Planned Behavior (TPB) is a theory based on the assumption that humans will usually behave in a reasonable way (planned behavior). Planned behavior means that the individual is aware of the behavior that will be carried out, thinks about the impact of his actions before deciding to carry out that behavior.

TPB was developed from the Theory of Reasoned Action (TRA) (Ajzen, 1967) and developed into TPB in 1991. TRA explains that behavior is reasoned action. This theory suggests that behavior is influenced by behavioral intentions. Intention is the most important determinant of a person's behavior. Furthermore, the TRA was revised and developed into the TPB by Ajzen and Fishbein (1988) by adding behavioral control factors as another factor that influences behavioral intentions besides attitudes and subjective norms. Based on the TPB, behavioral intentions are influenced by a combination of three factors, namely: attitude, subjective norms and behavioral control. Attitude is a person's assessment of whether behavior is favorable or unfavorable. Attitude is an individual's perception about the benefits and risks of carrying out

certain behavior. Subjective norms are a person's perception of social pressure to do or not do a behavior. Subjective norms are the influence of other people's thoughts on certain behavior. Perceived behavioral control is an individual's perception of the level of difficulty in carrying out certain behavior. Behavioral control reflects a person's confidence to overcome obstacles and obstacles to behave in a certain way.

2.3 Social Learning Theory

The social learning theory put forward by Bandura states that individuals learn by observing, imitating and modeling the environment (Bandura, 1977). Social learning theory is also relevant in the context of individual investors. Individual investor skills in investing are obtained through individual learning and social learning through seeking references by observing, imitating, discussing with friends, seniors or investment advisors (Vidanalage & Shantha, 2019).

2.3.1 Social Referencing

Social Reference Theory or Social Referencing is rooted in psychological theory. Social referencing is the seeking and use of information from other individuals to evaluate situations (Chen et al., 2010). This theory describes adaptive children who learn from the environment to get clues about how to respond to various situations, people, and stimuli. An adaptive advantage of social referencing may be that it allows individuals to learn about the environment: This condition generally occurs in situations of high ambiguity. When individuals are in new and unfamiliar conditions, individuals get clues from their environment about how to respond to various situations, people, and stimuli. Initially the Social Reference theory was used to explain children's developmental behavior (Ehli et al., 2020; Walden & Ogan, 1988) , recently the Social Reference theory has not only been used to explain the behavior of children, but also adults and even the behavior of investors in trading or investment (Chen et al., 2010).

2.3.2 Financial Literacy

Financial literacy is the knowledge, attitudes, skills to manage finances effectively. The level of financial literacy of investors is obtained over time (Gomes & Wojahn, 2017), through education, seminars/training, expert consultations, (Guzman et al., 2016; Kamyabi et al., 2013; Ramos et al., 2014; Tirthankar & Asish, 2016; Zafar & Farooq, 2014) as well as through experience (Thakur-Wernz & Samant, 2017) as well as through organizational learning (Jankowicz, 2000; Majuri & Halonen, 2019). Financial literacy is to build financial knowledge and skills that are useful for supporting more rational financial decisions in selecting, using, managing and allocating financial assets. Financial literacy in this case plays a role in fortifying a person's emotional stability by evaluating past trading experiences, considering behavior, the consequences of that behavior. Financial literacy is a metacognitive process for evaluating one's own cognitive, emotional and behavioral processes. Financial literacy adapts one's actions in future situations. Taking time to step back and consider the behavior, the consequences of that behavior. Self-awareness allows a person to understand feelings, qualities, shortcomings, drives, and goals.

2.4 Hypothesis Development

2.4.1 Influence of Herding Intentions on Herding Behavior

Based on the TPB (Ajzen & Fishbein, 2010; Ajzen, 1991, 2005), behavior begins with a conscious or unconscious intention or desire to carry out a certain behavior. In the context of herding, the herding behavior of novice investors starts with the intention or plan or desire to carry out herding, namely investing by following a group. Herding intentions increase when they feel they have low skills, complex information, and in the midst of uncertainty. The influence of intentions on investor behavior has been documented by previous research (Adam & Shauki, 2014; Lee, 2009b; Rajdeep Kumar Rau & Das, 2017), but there is still a gap in the literature in the context of herding behavior. The next research hypothesis can be formulated as follows.

> H1: Herding intentions have a positive effect on investors' herding behavior in investing in the stock market

2.4.2 The Influence of Attitude on Herding Intentions

Based on the TPB (Ajzen & Fishbein, 2010; Ajzen, 1991, 2005), intentions are influenced by attitudes. In the context of herding, novice investors' herding intentions in the stock market are influenced by attitudes towards herding. Investors who feel that herding is useful and easy to do will have a positive attitude towards herding. Attitude is a feeling of liking, pleasure and acceptance or approval of certain behavior (Ajzen & Fishbein, 2010; Ajzen, 1991, 2005). The influence of attitudes on intentions has been documented in previous studies (Adam & Shauki, 2014; Lee, 2009b; Rajdeep Kumar Rau & Das, 2017; Raut et al., 2018), but there is still a gap in the literature in the context of herding. The next research hypothesis can be formulated as follows.

> H2: Attitudes towards herding have a positive effect on investors' herding intentions in investing in the stock market

2.4.3 The Influence of Subjective Norms on Herding Intentions

Based on the TPB (Ajzen & Fishbein, 2010; Ajzen, 1991, 2005), behavioral intentions are also influenced by subjective norms. Subjective norms are a recognition of social pressure to display a specific behavior. Subjective Norms are a person's perception of social pressure to perform or not perform a behavior. Previous studies found the influence of subjective norms on stock investment decisions in the Indian capital market (Raut et al., 2018) and investor investment intentions in Malaysia (Adam & Shauki, 2014). In the context of herding, novice investors who feel that the social environment (friends, other investors) do not mind herding will have the intention to herd. The next research hypothesis can be formulated as follows.

> H3: Subjective norms have a positive effect on investors' herding intentions in investing in the stock market

2.4.4 Effect of Behavioral Control on Herding Intentions

Based on the TPB (Ajzen & Fishbein, 2010; Ajzen, 1991, 2005) , behavioral control influences behavioral intentions. Behavioral control is self-confidence to carry out certain behavior without experiencing obstacles (Raut et al., 2018). Previous studies found the influence of behavioral control on stock investment decisions in the Indian capital market (Raut et al., 2018) and the nature of stock investment in Malaysia (Adam & Shauki, 2014). In the context of herding, the more an individual believes that herding is good, the more likely it will be to carry out herding intentions. The next research hypothesis can be formulated as follows.

> H4: Behavioral control has a positive effect on investors' herding intentions in investing in the stock market

2.4.5 Financial Literacy as an External Factor

TPB based (Ajzen & Fishbein, 2010; Ajzen, 1991, 2005), external stimuli influence attitudes, subjective norms and behavioral control, before influencing behavioral intentions and behavior. External stimulus is obtained through financial literacy. Financial literacy makes investors more able to make more rational financial decisions (Agyapong & Attram, 2019). Financial knowledge and skills are useful to support more rational financial decisions in selecting, using, managing and allocating financial assets. Managers' financial literacy levels are gained over time (Gomes & Wojahn, 2017). A study of individual investors in the Indian capital market (Raut, 2020) found the influence of financial literacy on attitudes and behavioral control. The majority of investors with increasingly better financial literacy will make good investment choices (Adil et al., 2022; Rasool & Ullah, 2020). In the context of herding, the more individuals have good financial literacy, the more they will rely on investment decisions on their own abilities and control their herding behavior. The next research hypothesis can be formulated as follows.

> H5: Financial literacy has a negative effect on investors' attitudes towards herding when investing in the stock market

> H6: Financial literacy has a negative effect on investors' behavioral control over herding when investing in the stock market

2.4.6 Social Referencing as a Moderator of Herding Intentions on Herding Behavior

Based on stimulus-organism-response (Hazeltine & Schumacher, 2016), individuals process information from external factors (stimuli), including those obtained from the social environment. Beginner investors do not make investment decisions alone, but are often influenced by the social environment, such as: family, friends, senior managers, investment advisors. Previous studies through secondary data document the influence of social referencing on herding in the context of the technology stock market bubble in the late 1990s (Chen et al., 2010).

Social referencing as an environmental characteristic factor is not easily changed, so it can act as a moderator of the influence of herding intentions on herding behavior. The next research hypothesis can be formulated as follows.

H7: Social Referencing mediates the influence of herding intentions on investors' herding behavior in investing in the stock market

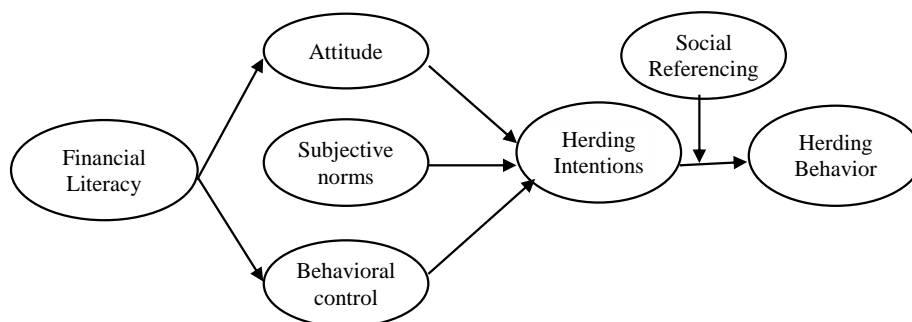The framework for thinking in this research is as follows .

Figure 1: Framework of Thought

3. RESEARCH METHODS

The data collection method is through a survey with a questionnaire instrument in the form of a list of questions distributed online (Google forms) which is given to investors via the Indonesian Stock Exchange. Research was conducted on 215 investors who invested in the stock market in Indonesia. This research uses the opinion of Hoogland and Boomsma (1998), so that with 43 free parameters, the number of samples = 43 x 5 = 215 samples. Samples were taken by simple random sampling with the assumption of homogeneous sample characteristics.

Herding behavior was measured using primary data through three scale question items developed from previous research (Vidanalage & Shantha, 2019) . Based on the results of the reliability test, the Cronbach Alpha value for the herding behavior variable is 0.931. The behavioral determinant variables in the TPB, namely behavioral intentions, attitudes, subjective norms and behavioral control, are measured using a scale of question items developed from previous research (Raut et al., 2018). Based on the results of the reliability test, the Cronbach Alpha values for the variables Attitude, Subjective Norms, Control of Individual Behavior are 0.953, 0.976, and 0.907, respectively.

Social referencing is the seeking and use of information from other individuals to evaluate situations (Chen et al., 2010). Social referencing is measured from two dimensions, namely: Authentic Relationships with advisors and Authentic Relationships with other investors (Chen et al., 2010) . Authentic Relationships with advisors, namely individuals or groups seeking references from experts or advisors as. Basic reference in forming decisions. Authentic Relationships with other investors, namely individuals or groups looking for references from friends they trust. Basic reference in forming decisions. The Authentic Relationships with advisor indicator was measured by two questions. The Authentic Relationships with other investors indicator is measured through two questions. Based on the results of the reliability test, the Cronbach Alpha value for the Social Referencing variable is 0.977.

Financial literacy is the ability to understand and apply various financial skills, such as in investment decisions (Adil et al., 2022). Financial literacy is measured by a scale of questions developed from three dimensions (Bongomin et al., 2018), namely: the level of knowledge, attitudes and financial behavior that investors have in making investment decisions so that investors can make the right decision. Based on the results of the reliability test, the Cronbach Alpha value for the financial literacy variable is 0.936. The questionnaire uses a Likert scale with 5 answer choices consisting of a scale: 1 = Strongly disagree, 2 = Disagree, 3 = Somewhat Agree, 4 = Agree, 5 = Strongly Agree.

Data analysis uses the Structural Equation- Partial Least Square (SEMPLS) approach. SEMPLS testing consists of a measurement equation test and a structural equation test. Testing measurement equations to test the validity and reliability of indicators in measuring constructs. The results of structural equation testing obtained path coefficient values. Testing the hypothesis of the relationship between variables uses the t-test via bottstrapping. The hypothesis is proven if the t-test probability value (p-value) <0.05 (Hair et al., 2017).

4. RESEARCH RESULT

4.1 Evaluation of the Measurement Model

Evaluation of the measurement model (outer model) aims to evaluate the indicator's ability to measure the construct. Evaluation of the measurement can be seen from the validity and reliability parameters. Validity parameters can be seen from the cross loading value (> 0.70). From the test results (table 1), it can be stated that all indicators can be used as determinants of each construct (cross loading value of > 0.70). Indicators as construct measures also have high constraints (average variance extracted (AVE) value is > 0.5, the composite reliability value is > 0.7, and the Cronbach's Alpha value is > 0.7) (Hair et al., 2017).

Table 1: *Cross* Loading Value

	ATD	BC	FL	HERD	INT	S.N	SR	SR x INT
ATD1	0.909							
ATD2	0.945							
ATD3	0.912							
BC1		0.968						
BC2		0.974						
BC3		0.974						
FL1			0.793					
FL2			0.825					
FL3			0.829					
FL4			0.829					
FL5			0.842					
HERD1				0.834				
HERD2				0.889				
HERD3				0.882				
INT1					0.883			
INT2					0.902			
INT3					0.882			

INT4					0.885		
SN1						0.961	
SN2						0.959	
SN3						0.940	
SR1							0.955
SR2							0.932
SR3							0.895
SR4							0.936
SR5							0.929
SR x INT							1,000

Source: Data Processing (2023)

Table 2: Construct Reliability

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
ATD	0.911	0.911	0.944	0.850
BC	0.971	0.972	0.981	0.945
FL	0.882	0.883	0.914	0.679
HERD	0.837	0.840	0.902	0.755
INT	0.911	0.911	0.937	0.789
S.N	0.950	0.950	0.968	0.909
SR	0.961	0.961	0.969	0.864

Source: Data Processing (2023)

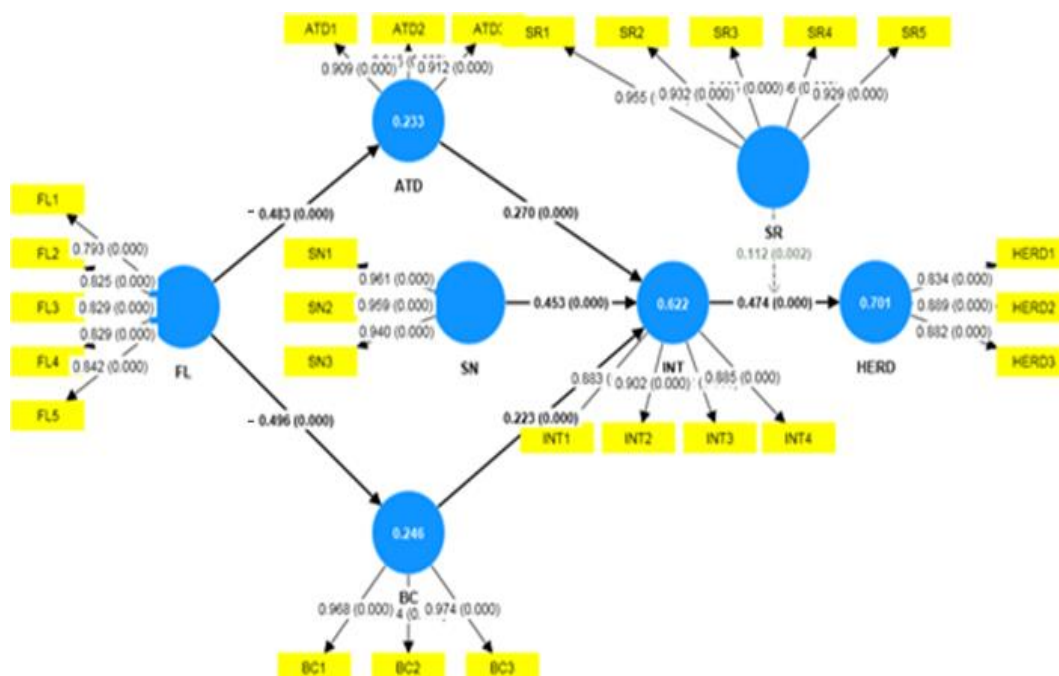**Figure 2: Structural Model (path coefficient, p-value)**

Source: Data Processing (2023)

Table 3: R Square

Endogenous	R *Square*
Herding Behavior (HERD)	0.701
Herding Intent (INT)	0.622
Attitude (ATD)	0.233
Behavior Control (BC)	0.246

Source: Data Processing (2023)

The R-Square (table 3) of the explanatory variable as a determinant of herding behavior (HERD) is 0.701 (70.1%). The R-Square of the explanatory variable as a determinant of Herding Intention (INT) is 0.622 (62.2%). The R-Square of the explanatory variables as attitude determinant (ATD) and behavioral control variable (BC) are 0.233 (23.3%) and 0.246 (24.6%), respectively.

Table 4: Summary of Hypothesis Testing Results

	β	*P values*	Conclusion
ATD -> INT	0.270	0,000	Accept H1
SN -> INT	0.453	0,000	Accept H2
BC -> INT	0.223	0,000	Accept H3
FL -> ATD	-0.483	0,000	Accept H4
FL -> BC	-0.496	0,000	Accept H5
INT -> HERD	0.474	0,000	Accept H6
SR x INT -> HERD	0.112	0.002	Accept H7

Source: Data Processing (2023)

Based on table 4, it can be explained that of the 7 hypotheses proposed, all were accepted because the significance value (*p value*) was <0.05. Attitude has a significant effect on herding intentions. The path coefficient value is 0.107, which indicates that the direction of the relationship between attitude (ATD) and herding intention (INT) is positive or in the same direction. This means that if attitude increases, herding intention (INT) will increase and vice versa. Thus, H_1 is accepted.

Based on table 4, the influence of attitude (ATD) on Herding intention (INT) is positive and significant in the 2-tailed test (*p-value* = 0.000 < 0.05). Thus, **H_1 is accepted.** A positive coefficient value (β= 0.270) indicates that increasing attitudes will be followed by increasing herding intentions and conversely, decreasing attitudes will be followed by decreasing herding intentions. The influence of subjective norm (SN) on Herding intention (INT) is positive and significant in the 2-tailed test (*p-value* = 0.000 < 0.05). Thus, **H_2 is accepted.** A positive coefficient value (β= 0.453) indicates that increasing subjective norms will be followed by increasing herding intentions and conversely, decreasing subjective norms will be followed by decreasing herding intentions. The influence of behavioral control (BC) on Herding intention (INT) is positive and significant in the 2-tailed test (*p-value* = 0.000 < 0.05). Thus, **H_3 is accepted.** A positive coefficient value (β= 0.223) indicates that increasing behavioral control will be followed by increasing herding intentions and conversely, decreasing behavioral control

will be followed by decreasing herding intentions. Financial literacy has a negative and significant effect on both attitudes and behavioral control. The influence of financial literacy (FL) on herding attitude (ATD) is negative and significant in the 2-tailed test (*p-value* = 0.000 < 0.05). Thus, **H 4 is accepted.** The negative coefficient value (β= - 0.483) shows that the higher financial literacy will be followed by the lower herding attitude and conversely the lower financial literacy will be followed by the higher investor herding attitude. The influence of financial literacy (FL) on herding behavior control (BC) is significant in the 2-tailed test (*p-value* = 0.000 < 0.05). Thus, **H 5 is accepted.** A positive coefficient value (β= 0.496) indicates that increasing financial literacy will be followed by increasing behavioral control and conversely, decreasing financial literacy will be followed by decreasing control of investors' herding behavior.

The influence of Herding Intention (ATD) on Herding behavior (HERD) was significant in the 2-tailed test (*p-value* = 0.000 < 0.05). Thus, **H 6 is accepted.** Herding intention is a predictor of herding behavior. Social referencing factors moderate the influence of herding intentions on herding behavior. Interaction factors between social referencing factors and herding intentions (SRxINT) is significant in the 2-tailed test (*p-value* = 0.000 < 0.05). Thus, **H 7 is accepted.** The higher social referencing strengthens the influence of herding intentions on herding behavior.

5. DISCUSSION

Investor behavior in investing in the stock market involves not only rational aspects, but also psychological and social aspects. TPB explains behavior in a rational as well as psychological and social approach. However, the TPB has weaknesses in explaining external factors, sources of investor information and knowledge. This research further adds financial literacy and social referencing which can influence psychosocial aspects in the TPB model. Financial literacy as an external stimulus can improve investors' attitudes towards investing better while increasing investors' ability to control behavior (Raut, 2020). In contrast to financial literacy which acts as an external stimulus that influences attitudes and behavioral control, social referencing acts as a moderator between intentions and herding behavior. This is because social referencing acts as an environmental characteristic.

This research uses a model based on the Theory of Planned Behavior (TPB) to explain the determinants of herding behavior. The TPB model has been widely used in various financial behaviors such as behavioral intentions to invest in the capital market (Adam & Shauki, 2014; Lee, 2009b; Raut, 2020; Raut et al., 2018), intentions in financial planning (She et al., 2023), choice of financial products (Akhtar et al., 2023), intention to adopt internet banking (Lee, 2009a; Shih & Fang, 2004; Wan Zahar et al., 2008). The results of this study support previous research (East, 1993; Gopi & Ramayah, 2007; Raut et al., 2018) that attitudes, subjective norms and behavioral control are predictors of intention, while intention is a predictor of behavior. Consistent results for herding behavior.

This research contributes to the development of the Theory of Planned Behavior (TPB) in predicting investor behavior, namely through integration with this research adding financial literacy and social referencing variables . The results of this study found that financial literacy had a positive and significant effect on both attitudes and behavioral control (p-value < 0.05). This means that financial literacy improves investors' attitudes in investing in the stock market, including assessing the benefits and risks of following analysis, investment advisors or other investors. Increasing financial literacy can also increase investors' ability to control investment behavior, including self-confidence to follow analysis, investment advisors or other investors. The results of this research support previous research (Raut, 2020) which also found the influence of financial literacy on attitudes and behavioral control.

An important requirement for information processing and decision-making is knowledge about the product. Knowledge of financial products is represented in financial literacy (Huhmann and McQuitty, 2009). Some financial literacy has emerged over the years. Mandell (2008) defines financial literacy broadly as the knowledge a person needs to enable him or her to make important and best financial decisions. The majority of investors with increasingly better financial literacy will make good investment choices (Adil et al., 2022; Rasool & Ullah, 2020). In previous literature, financial literacy is one of the factors that significantly influences an individual's ability to make financial decisions (Adil et al., 2022; Rasool & Ullah, 2020). The lack of financial literacy has an impact on less than optimal financial decision-making. Financial literacy, embedded in the form of stock market knowledge, is also the main driver of individual participation in the stock market and share ownership (Mouna and Anis, 2017).

The results of this study also found the role of social referencing as a moderator of the influence of intention on herding behavior (p-value < 0.05). Investment activities can also be social activities. In certain situations, and where individuals are motivated to be part of a group, the possibility of other modes, and forms of collective behavior may exist. Spotton Visano points out that investing in equity markets is not immune from social influences, especially when investors face uncertainty. Situations of uncertainty, such as those in internet stocks in the late 1990s, caused investment decisions to be motivated by reasons other than the analysis of financial information that was not available at that time. As a "new" investor, facing the absence of financial information for a revolutionary industry, will encourage investors to use other sources of information. Imitating the behavior of other people in social reference groups is one of the frequent motivations.

It is hoped that this research can enrich the model of investor behavior in investing in the capital market using rational, psychological and social approaches. The development of this research model is based on previous research models both in the TPB approach (East, 1993; Gopi & Ramayah, 2007; Raut et al., 2018) and the financial behavior approach from the financial literacy aspect (Berger et al., 2018; Bhamra, 2000; Cahill & Liu, 2021; Chen et al., 2010; Kawshala et al., 2020) in explaining investor behavior in investing in the capital market. This research also contributes to financial management related to investment decisions by including aspects of psychology, sociology and social learning in addition to financial factors. Financial literacy and social referencing factors For clarify the influence factors of the social

environment in the TPB. This is because investors in investing in general are not always alone, but some investors often use investment advisors and online investment services (Leger, 2020) .

6. CONCLUSION

The results of this research found a configuration model of the relationship between financial literacy and social referencing in the TPB model regarding investor-herding behavior. Attitudes, subjective norms and behavioral control have a positive influence on herding intentions and behavior. Financial literacy has a negative effect on attitudes and behavioral control in the TPB model. Furthermore, social referencing moderates the influence of intention on herding behavior. This research provides theoretical implications by adding financial literacy and social referencing to the TPB model to control investor-herding behavior. The results of this research provide implications for the learning process of individual investors both through financial literacy and social processes through social referencing.

The results of this study can be used by investment advisors as input in developing financial literacy instruments and social learning designs to improve the quality of investment decisions and control herding behavior. This indirectly supports the development of more efficient investment performance in the capital market. The results of this study provide implications for online investment platform developers in understanding the behavior of novice investors. Understanding beginner behavior is important for the continued development of social-based online investment platforms.

This research has several limitations. First, this study focuses on understanding the herding behavior of novice investors in the capital markets of developing countries in Indonesia. The impact of herding behavior on whether it is beneficial or not for novice investors is not the focus of research. This study recommends that further research can examine the impact of herding behavior on individual investor returns. Second, the nature of survey-based research makes it vulnerable to changes over time. The results of this research may change due to the influence of technological developments.

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