Emotional intelligence and behavioral biases on millennial stock trading decisions: a case study of Bibit investors

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Abstract

This research explores the relationship between Emotional Intelligence (EI) and Behavioral Bias with Decision-Making Processes in Stock Trading among Millennial Investors. Data were collected through an online survey of 100 investors using the Bibit platform and analyzed using multiple linear regression and SPSS statistical software. The research findings indicate that Emotional Intelligence and Behavioral Bias significantly influence stock trading decisions, with a determination coefficient reaching 76%. This underscores the importance of understanding psychological factors in investment decision-making among the millennial generation. Therefore, raising awareness of Emotional Intelligence and mitigating Behavioral Bias can enhance the quality of stock trading decisions among millennials in the stock market, thereby contributing to long-term financial success.

Keywords*: emotional intelligence, millennial generation, behavioral bias, stock trading.*

Introduction

The Indonesian capital market has witnessed a significant increase in investor participation, with recent data from PT Kustodian Sentral Efek Indonesia (KSEI) indicating a total of 10,623,731 investors. Among these, local investors dominate by 99.78% (KSEI, 2023). This trend aligns with the consistent growth of Single Investor Identification (SID) from 2020 to 2023, where millennials, individuals aged 30 and below, play a significant role, comprising 58.39% of the total investor population (KSEI, 2023).

Millennials, born between 1981 and 1996, have become a focal point of research in various fields, including financial behavior and investment. Their unique characteristics, such as distinct consumption patterns, easy access to technology, and evolving financial literacy, make them an intriguing group to study in the context of stock trading decisions (Ningtyas, 2019).

This generation displays traits that set them apart from previous ones. Growing up in the digital era of information technology, they have convenient access to information and stock trading platforms. Observations of this phenomenon reveal that millennials' stock trading decisions are influenced not only by economic factors but also by psychological ones (Negara & Febrianto,

2020).

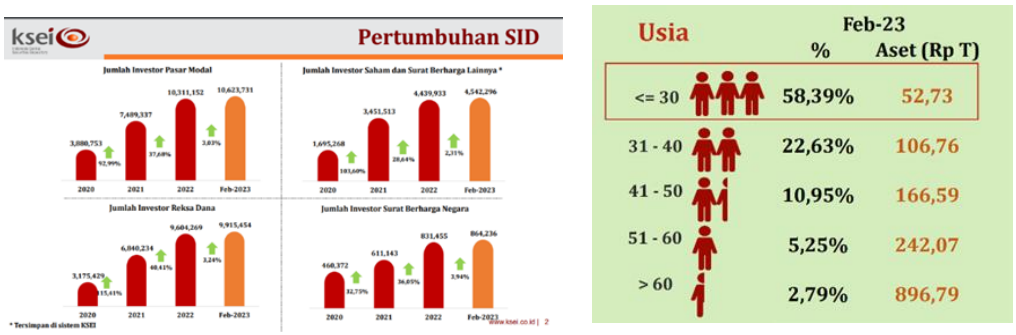

Figure 1. Local Investor count Data
Source: KSEI, 2023

Millennials' interest in investing has been steadily rising caused by technological advancements and increased financial literacy. According to data from the Indonesian Central Securities Depository (KSEI) from 2020 to 2023, millennial investors under 30 years old constituted 58.39% of the total, indicating a significant growth in investment interest within this generation (KSEI, 2023).

Understanding the financial behavior of millennials is crucial for developing appropriate investment strategies and grasping the dynamic nature of the stock market. Further studies on the influence of economic and psychological factors on millennials' investment decisions can provide valuable insights for market participants and policymakers. Millennials are certainly considering a positive future guarantee. This is due to personal characteristics such as anger, anxiety, and fear, which influence an individual's behavior in making investment decisions (Studies, 2021)

Millennials are known for their close relationship with technological advancements, socializing habits, and tendency to share experiences through social media. They prioritize experiences over savings, prefer cashless transactions, and frequently spend time at hangout spots. This consumerist behavior can lead to financial difficulties (Ningtyas, 2019).

The stock market, as a primary investment arena, is influenced not only by economic factors but also by psychological aspects such as emotional intelligence and behavioral biases. Observations of millennial investment behavior reveal the complexity of their decision-making processes, which involve emotional responses and specific behavioral tendencies. These unique characteristics highlight the need to further understand the relationship between emotional intelligence, behavioral biases, and stock trading decisions among millennials (Negara & Febrianto, 2020)

Research by Aslam et al. (2020) highlights the role of social media and the internet in shaping the investment behavior of millennials. Their findings indicate that digital platforms have a primary influence on the preferences and investment decisions of this generation. Studies by Rahman and Gan (2020) add a psychological dimension through research on investor sentiment and the correlation between emotional intelligence and financial literacy. The results show that emotional intelligence influences the investment decisions of millennials, emphasizing the importance of emotional awareness in investment

management.

Behavioral biases, such as heuristic bias, herding bias, overconfidence bias, and loss aversion bias, have a significant impact on the investment decisions of millennials. Research by Rehmat et al. (2023) highlights the impact of heuristic bias on investment decisions, while Puspawati and Yohanda (2022) find evidence of herding bias.

This study aims to investigate how emotional intelligence and behavioral biases affect stock trading decisions among millennial investors. There is a knowledge gap regarding the specific relationship between emotional intelligence, behavioral biases, and stock trading decisions among millennial investors. Therefore, this research aims to fill this gap by examining the impac t of emotional intelligence and behavioral biases on stock trading decisions of millennials, particularly those who actively use digital trading platforms such as the Bibit App.

Previous studies have provided valuable insights into the influence of psychological factors on financial decision-making. A study by Bucciol et al. (2020) emphasizes the role of emotions in financial risk-taking, laying the groundwork for understanding how this aspect can affect stock trading decisions among the millennial generation.

This study found that emotional intelligence has a positive and significant impact on investment decisions, while sociodemographic factors such as gender, age, income, and education do not influence. Financial literacy enhances the positive effect of emotional intelligence on investment decisions, especially among novice investors. These findings highlight the importance of emotional intelligence and financial literacy in making better investment decisions (Puspita et al., 2023).

Self-awareness is the ability of an individual to recognize and understand themselves, including their thoughts, emotions, motivations, strengths, and personal weaknesses. Handling emotions refers to an individual's ability to effectively recognize, express, manage, and respond to emotions in themselves and others. Motivation is measured as the level of drive or energy that propels an individual to initiate, complete, or sustain an activity or achieve a goal. Empathy can be measured as the ability of an individual to understand and feel the emotions, perspectives, or emotional experiences of others. Social skills refer to a set of interpersonal abilities that enable individuals to interact, communicate, and collaborate effectively with others *(*Muliadji et al.*,* 2023*)*.

Herding bias is a phenomenon where individuals tend to follow or imitate the actions or decisions of the majority without conducting a careful analysis or consideration of the available information. Overconfidence bias is the tendency for individuals to have excessive confidence in their abilities, knowledge, or predictions. In the context of finance or decision-making, overconfidence bias occurs when someone has a level of confidence in their abilities or predictions that exceeds objective reality. Loss aversion is a concept in financial behavior that refers to the human tendency to feel and avoid losses more intensely than gaining equivalent profits (Prayudi & Purwanto, 2023).

Representative bias can occur when an investor makes decisions to buy or hold certain stocks based solely on the general image or common characteristics of the company, without conducting careful analysis of its performance or

prospects. The desire to seek information about desired stocks can be defined as an individual's urge or desire to search for and obtain information related to specific stocks that interest them (Park et al., 2019). Behavioral biases can influence their judgment and decisions, which in turn can impact investment outcomes. These biases can include confirmation bias, availability bias, overconfidence bias, and others (Mittal, 2022).

The benefits of this research include contributions to the literature on financial and investment behavior of millennials, aiding investors in designing more effective investment strategies, assisting digital trading platforms in optimizing their functionality, and providing guidance for further research in exploring the psychological aspects of millennial investment. By formulating clear research questions and objectives, this study is expected to provide deeper insights into the psychological factors influencing stock trading decisions of millennials and offer valuable contributions to the development of literature and investment practices.

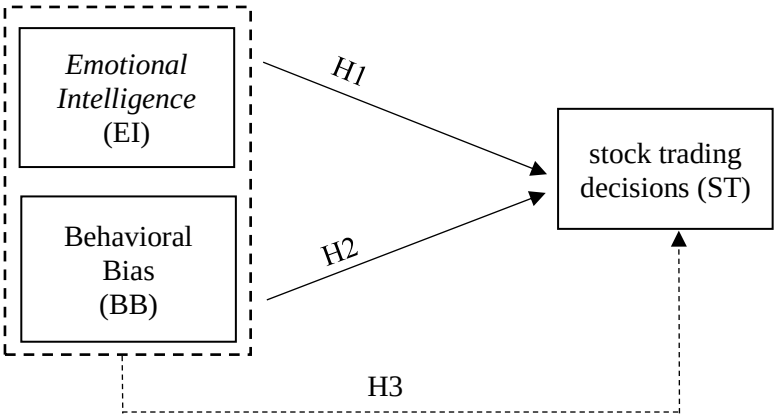

Figure 2. Conceptual Framework

The Hypothesis proposed in the study is :

H_1: Emotional Intelligence Influences Stock Trading Decisions

H_2: Behavioral Bias Influences Stock Trading Decisions

H_3: Emotional Intelligence and Behavioral Bias Simultaneously Influence Stock Trading Decisions

Methods

The research methodology utilized a quantitative approach, employing a survey questionnaire for primary data collection. The study participants consisted of millennials actively involved in stock trading, specifically those born between 1981 and 1996, possessing a minimum of one year of trading experience with at least two stock transactions. The research population comprised members of the Bibit stock trading group actively participating in the Indonesian market, with a sample of 100 respondents selected through purposive sampling techniques.

This research employs a quantitative method using multiple linear regression analysis, with data processed through computer software, specifically SPSS version 26. The commonly used quantitative analysis involves statistical analysis (Ghozali, 2018).

Table 1. Definition of Operational Variables

Variable	Indicators	Symbol	Items
Emotional Inttelegence (Muliadji et al., 2023)	Self-awareness	EI1	I find it easy to find alternatives when it comes to investment decisions.
	Handling emotions	EI2	I always feel confident about all the investment decisions I make.
	Motivation	EI3	I have an optimistic attitude towards all the investment decisions I make.
	Empathy	EI4	I easily get angry but it doesn't last long. In emergency situations, I usually lose self-control.
	Sosial skills	EI5	I am able to control my anger.
		EI6	I enjoy facing challenges to solve problems.
		EI7	I always have the motivation to achieve my goals in investment.
		EI8	I can sense other people's feelings.
		EI9	I am good at talking to and understanding other people's feelings.
		EI10	I have the ability to persuade others.
		EI11	
Behavioral Bias (Mittal, 2022)	Herding bias	BB1	I am more confident in other people's analysis when trading stocks.
	Overconfidence bias	BB2	I believe that the analysis conducted by large investors can create profit opportunities.
	Loss aversion	BB3	I am more confident in the trading analysis I make.
		BB4	With the knowledge and analysis I have, I believe I can profit from stock trading.
		BB5	I would feel disappointed if I make profits that don't match expectations.
		BB6	I feel ashamed if my stock trading doesn't generate profits but also doesn't incur losses.
Decision Making in Stock Trading (Park et al., 2019)	Representative bias	ST1	Before trading, I will analyze the decisions of several successful investors.
	Desire for stock information	ST2	I always choose stocks that are likely to have high returns to avoid the risk of loss.
	Blue chips ownership	ST3	I always seek and continuously update information about the stocks I desire to avoid risks.
		ST4	I seek information about the stocks I desire by considering my financial condition to avoid the risk of loss.
		ST5	I feel secure when investing money in blue-chip stocks because of minimal risk of loss.
		ST6	I always appreciate owning blue-chip stocks because they provide stable income and substantial assets to avoid the risk of loss.

Primary data was gathered through an online survey administered via Google Forms, while secondary data was derived from pertinent literature. Data analysis involved multiple linear regression utilizing SPSS 26 software. Various

statistical tests were conducted, including validity and reliability assessments, as well as classic assumption tests such as normality, multicollinearity, heteroscedasticity, and autocorrelation tests. Hypotheses were examined using the t-test to assess the partial effects of independent variables, the F-test to evaluate the simultaneous effects of independent variables, and the coefficient of determination (R^2) to measure the model's explanatory capacity regarding the variance of the dependent variable.

Result and Discussions

Validity is a tool used to measure whether a questionnaire is valid or not. One way to determine which questionnaires are valid and which are not is to find out the corresponding r table. The formula for the r table is df = N - 2, so 100 - 2 = 98, thus rtabel = 0.1966. A question can be considered valid if the value of r calculated is greater than the r table. Validity testing can be seen in the following table 2.

Table 2. Validity test

Variable	Indicator	r count	r table	Information
Emotional inteligence (EI) (XI)	EI1	0.717	0.1966	VALID
	EI2	0.714	0.1966	VALID
	EI3	0.810	0.1966	VALID
	EI4	0.686	0.1966	VALID
	EI5	0.754	0.1966	VALID
	EI6	0.734	0.1966	VALID
	EI7	0.807	0.1966	VALID
	EI8	0.724	0.1966	VALID
	EI9	0.732	0.1966	VALID
	EI10	0.833	0.1966	VALID
	EI11	0.788	0.1966	VALID
Behavioral Bias (X2)	BB1	0.793	0.1966	VALID
	BB2	0.771	0.1966	VALID
	BB3	0.834	0.1966	VALID
	BB4	0.796	0.1966	VALID
	BB5	0.740	0.1966	VALID
	BB6	0.825	0.1966	VALID
Stock Trading Decisions Making (Y)	ST1	0.676	0.1966	VALID
	ST2	0.774	0.1966	VALID
	ST3	0.816	0.1966	VALID
	ST4	0.848	0.1966	VALID
	ST5	0.758	0.1966	VALID
	ST6	0.768	0.1966	VALID

From the validity calculation results in the table above, it can be seen that r calculated is greater than the r table. This means that all questions can be considered valid.

Reliability is a tool to test the consistency of respondents' answers to questions in a questionnaire. To measure the reliability of this research instrument, the Cronbach's alpha test is conducted. A construct or variable is considered reliable if it yields a Cronbach's alpha value > 0.6. If the Cronbach's alpha value is < 0.6, it can be interpreted that the research variable is not reliable.

The table 3 shows that the Cronbach's alpha is 0.923 for Emotional Intelligence (EI), 0.880 for Behavioral Bias, and 0.865 for Stock Trading Decision Making, all exceeding the threshold of 0.6. Therefore, it can be concluded that the questions attached regarding Emotional Intelligence (EI), Behavioral Bias, and Stock Trading Decision Making are reliable.

Table 3. Reliability test

Variable	Cronbach's Alpha
Emotional inteligence (EI)	0.923
Behavioral Bias	0.880
Stock Trading Decisions Making	0.865

Multiple linear regression analysis is employed to assess the combined impact of independent variables on the dependent variable. The outcomes are shows in table 4.

Table 4. Multiple linear regression analysis

Variable	Coefficient	t-value	Sig.
Konstanta	4.390	-	-
Emotional inteligence (X1)	0.219	2.979	0.004
Behavioral Bias (X2)	0.451	3.616	0.000

Y = 4,390 + 0,219 X1 + 0,451 X2 + e (1)

Based on the results of the multiple linear regression equation, it can be interpreted as follows:

a = the constant of 4.390 indicates that when the variables Emotional Intelligence (EI) and Behavioral Bias are held constant or equal to 0, the Stock Trading Decision Making is 4.390.

According to the table obtained from the processing using SPSS version 26, the multiple regression equation obtained is:

a. *b*1=0.219 means that if the Emotional Intelligence (EI) variable increases by 1, then the Stock Trading Decision Making will also increase by 0.219..
b. *b*2=0.451 means that if the Behavioral Bias variable increases by 1, then the Stock Trading Decision Making will also increase by 0.451.

Hypothesis testing is used to determine the significance of each independent variable on the dependent variable. This involves testing the significance of each regression coefficient using regression analysis, the F-test, and the t-test statistics, as follows:

Table 5. Test Results t

Hypothesis	Variable	t-value	t-table	Sig.	Decision
H1	Emotional inteligence (EI)	2.979	1.984	0.004	Significant
H2	Behavioral Bias	3.616	1.984	0.000	Significant

The influence of Emotional Intelligence (EI) on Stock Trading Decision Making shows that the t-value is greater than the t-table (2.979 > 1.984), thus it can be concluded that the Emotional Intelligence (EI) variable significantly affects Stock Trading Decision Making among Millennial Seed Investors.

The influence of Behavioral Bias on Stock Trading Decision Making shows

that the t-value is greater than the t-table (3.616 > 1.984), thus it can be concluded that the Behavioral Bias variable significantly affects Stock Trading Decision Making among Millennial Seed Investors.

Table 6. F Test

F Test	F-value	F-table	Sig.	Decision
Model	158.217	2.70	0.000	Significant

Based on the results of the simultaneous test above, it is known that the F-value is 158.217 > F-table value of 2.70. In the above F-test, a significance level of 0.000 is obtained because the significance value (sig 0.000 < 0.05), thus the regression model can be used to predict that the Emotional Intelligence (EI) and Behavioral Bias variables together significantly influence Stock Trading Decision Making among Millennial Seed Investors.

Table 7. Coefficient of Determination (R^2)

Statistics	Value
R	0.875
R^2	0.765
Contribution	76.5%

Based on the results from the summary table, the value of R = 0.875 and the coefficient of determination value = 0.765.

Discussions

Based on the results of the first hypothesis test (H1), it was found that Emotional Intelligence (EI) has a significant influence on stock trading decisions, with a t-value of 2.979, which is greater than the t-table value of 1.984. This indicates that an increase in Emotional Intelligence will positively impact the stock trading decisions of the millennial generation. This finding is in line with previous research showing that Emotional Intelligence plays an important role in investment decision-making. For instance, Ahmad (2018) emphasized that the ability to manage and understand emotions can enhance the quality of investment decisions made by individuals.

The results of the second hypothesis test (H2) show that behavioral biases also have a significant influence on stock trading decisions, with a t-value of 3.616, which is greater than the t-table value of 1.984. This finding confirms that behavioral biases, such as overconfidence bias, herding bias, and loss aversion bias, can influence the stock trading decisions of the millennial generation. Rehmat et al. (2023) noted that millennials, who are accustomed to digital environments and abundant information, tend to be more susceptible to these behavioral biases. Research by Puspawati and Yohanda (2022) also supports that herding bias can significantly affect investment decisions.

The third hypothesis test (H3) indicates that simultaneously, Emotional Intelligence and behavioral biases have a significant influence on the stock trading decisions of the millennial generation, with an F-value of 158.217, which is greater than the F-table value of 2.70, and a significance level of 0.000. The coefficient of determination (R^2) value of 0.765 suggests that 76.5% of the

variability in stock trading decisions can be explained by these two variables, while the remaining 23.5% is explained by other variables not included in this research model.

This research strengthens the theory that Emotional Intelligence (EI) and behavioral biases play crucial roles in financial decision-making. Emotional Intelligence, as explained by Goleman (1998), includes components such as self-awareness, self-regulation, motivation, empathy, and social skills. These components are highly relevant in the context of complex financial decisions because they help individuals remain calm and rational when facing uncertain and high-risk situations. Another researchs also found that the ability to recognize and manage emotions significantly influences investment decisions, indicating that investors who are more self-aware and capable of emotional regulation tend to make better decisions (Gupta, 2019; Raheja & Dhiman, 2020).

Kahneman and Tversky's prospect theory (1979) demonstrates that people generally shy away from risk and perceive losses more acutely than comparable gains from the perspective of behavioral biases. This study finds that behavioral biases such as overconfidence and herding bias also significantly impact investment decisions. Overconfidence can lead investors to be overly certain in their ability to choose the right stocks, while herding bias refers to the tendency to follow others' investment decisions without thorough analysis. These findings are consistent with another researchs, showing that these biases can significantly affect investment outcomes (Gupta, 2019; Novita Sari & Damingun, 2021).

This research provides new insights by specifically examining the influence of Emotional Intelligence and behavioral biases on stock trading decisions on the Bibit platform, a popular digital trading platform in Indonesia. By focusing on the millennial generation, this study highlights how the unique characteristics of this group, such as high digital connectivity and abundant access to information, influence their investment decisions. Millennials are often more digitally connected and have easy access to a variety of financial information, but they are also susceptible to information overload and social influences. Therefore, understanding the impact of Emotional Intelligence and behavioral biases can help in designing more effective financial education programs to improve the investment skills of this generation.

Conclusion

This study found that Emotional Intelligence (EI) and Behavioral Bias significantly and positively influence stock trading decisions among Millennial investors. In other words, Millennial investors with higher levels of emotional intelligence and awareness of behavioral biases tend to make better stock trading decisions. Emotional intelligence helps investors manage their emotions while investing, allowing them to remain calm and focused on long-term investment goals. Additionally, awareness of behavioral biases enables investors to mitigate the negative impact of these biases, leading to more objective and well-analyzed decisions.

The findings of this study highlight the need for financial education and training that not only focuses on the technical aspects of investing but also on the development of emotional intelligence and awareness of behavioral biases. Consequently, Millennials can become more intelligent and prudent investors.

However, this research is limited as it focuses only on a specific population of Bibit investors and uses a restricted sampling method, which may not be generalizable to the entire Millennial population. Future research is recommended to involve a broader and more representative sample and to expand the scope of variables studied to deepen the understanding of how psychological factors influence Millennial investment behavior in the stock market.

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