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The Influence of Herding Behavior and Confirmation Bias on Investment Decision in Generation Z with Gender as Moderating Variable

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Abstract
In the digital era, access to investment information has become easier, especially through social media actively used by Generation Z. However, in making investment decisions, they can become more vulnerable to two biases known as herding behavior, which is the tendency to follow the actions of others, and confirmation bias, which is the tendency to seek information that reinforces their own views. This study aims to examine the influence of herding behavior and confirmation bias on investment decisions in Generation Z, with gender as a moderating factor. The population in this study is all Generation Z investors who are students of the Faculty of Economics and Business at Universitas Klabat, with sample selection using purposive sampling, resulting in 83 samples. The data used in this study is primary data, obtained from the distribution of questionnaires. This research uses linear regression to test the influence of research variables. The results of hypothesis testing indicate that herding behavior does not have a significant effect on the investment decisions of Generation Z, while confirmation bias has a significant effect. Additionally, gender does not moderate the relationship between herding behavior and investment decisions, nor between confirmation bias and investment decisions in Generation Z.

Keywords
Confirmation bias, gender, generation z, herding behavior, investment decision making.

INTRODUCTION

Investment is the act of allocating funds or resources in the present with the hope of gaining profits in the future (Tandelilin, 2010). The prospect of gaining profits in the future motivates many people to start investing (Smart & Zutter, 2020). When making investments, the capital market serves as a platform for investors.

The capital market is where parties with excess funds meet with those needing funds by trading securities (Tandelilin, 2010). According to data from the Kustodian Sentral Efek Indonesia (KSEI) as of November 3, 2023, the number of capital market investors based on the Single Investor Identification (SID) has reached 10,000,628. This number, compared to the previous year's figure of 7,489,337, has increased by 33%. Moreover, the current capital market is dominated by investors under 30,

accounting for more than 59% with assets exceeding IDR 54 trillion. This data shows investors' increasing interest in the capital market in Indonesia.

The digital era has made social media a place where information is widely disseminated. Access to investment-related information has become more accessible, thus attracting many people to start investing. The Asosiasi Penyelenggara Jasa Internet Indonesia (APJII) in 2022 found that Generation Z dominates internet usage. Generation Z has grown up in an era where the internet plays a central role in their social lives, integrating digital technology into their daily identities (Singh & Dangmei, 2016). This high attachment to technology and social media has shaped how Generation Z communicates, makes decisions, and includes investing (Roberts et al., 2014; Rudin, 2019).

In finance, a fundamental concept is known as the efficient market hypothesis. According to Fama (1965), in the efficient market hypothesis, investors always act rationally, and stock prices always reflect all available information. In contrast, behavioral finance theory explains that investors do not always act rationally; in general, people can be influenced by psychological and cognitive errors in making investment decisions (Statman, 1995).

One investor behavior phenomenon studied in behavioral finance is herding behavior. Herding behavior is the tendency to follow the actions of others with the belief that many people are doing it (Park & Kim, 2017). Previous research by Afriani and Halmawati (2019) found that herding behavior influences investment decisions. In the digital era, access to information has become easier. According to data from the Indonesian Ministry of Communication and Information Technology regarding the status of digital literacy in 2021, social media is the most frequently accessed platform for finding various information. The tendency towards herding behavior is reinforced by social media, where investors can discover various investment-related information from friends and influencers that affect their investment decision-making (Rudin, 2019).

Another psychological bias in behavioral finance is confirmation bias. Investors tend to seek information that only supports what they believe in, leading to a bias known as confirmation bias (Pompian, 2012). Confirmation bias is a behavior where people tend to seek information that supports their views (Parikh, 2009). A previous study by Cheng (2018) found that investors tend to engage in confirmation bias when making investment decisions.

The internet and social media provide easy access to useful information for users, although not all information available on the internet and social media is accurate. Social media is where investors can find investment-related information that can influence investment decisions (Rudin, 2019). The algorithm reinforces the tendency for investors to seek information that supports their personal views on social media (Zimmer et al., 2019). Moreover, Holmes (2016) found that social media algorithms are more dangerous because they make users only see news and posts that confirm what they want to see, thereby reinforcing the tendency towards confirmation bias, affecting investment decisions.

The basic idea about Generation Z's habits that dominate internet usage, including herding behavior and confirmation bias, is due to their way of interacting with social media. Generation Z often follows the investment decisions chosen by friends or influencers on social media without further checking the information, which is an example of herding behavior (Park & Kim, 2017). They are influenced by seemingly popular trends. Furthermore, social media algorithms routinely display content that aligns with the user's views and interests, reinforcing confirmation bias (Zimmer et al., 2019). This leads to a tendency for Generation Z to seek and believe information that supports their beliefs while often ignoring conflicting information. Both herding behavior and confirmation bias occur because social media facilitates the influence of others' opinions and strengthens users' personal views.

When making decisions, men and women consider different factors. The behavioral differences between men and women are not only caused by biological structures but are also formed through social and cultural processes (Bussey & Bandura, 1999). Gender identity has been considered inherent since ancient times. Men tend to take risks in activities such as hunting for sustenance, while women, due to their limitations in hunting, are more likely to take care of children at home (Bales & Parsons, 2013; Puspitawati, 2013). A study conducted by Putri and Mulyani (2023) found that gender plays a role in behavioral biases towards investment decisions, where men tend to be more biased than women.

This study aims to analyze the influence of herding behavior and confirmation bias on Generation Z's investment decisions, considering gender as a moderating variable. Through this analysis, it is hoped to gain a deeper understanding of how Generation Z's close relationship with social media affects their investment behavior towards the tendency to follow others and/or the tendency to seek information that supports personal beliefs, as well as how gender moderates the relationship between herding behavior and confirmation bias on investment decisions in Generation Z. Based on the

explanation, this study aims to analyze "the influence of herding behavior and confirmation bias on investment decisions in Generation Z with gender as a moderating variable."

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Behavioral Finance Theory

Shefrin (2002) defines behavioral finance as a field of study that explores how psychology affects investors' financial decisions. Parikh (2009) defines behavioral finance as a concept that explains that humans do not always think rationally in financial decision-making because they are influenced by cognitive psychology and emotions. Statman (1995) suggests that the concept of behavioral finance posits that humans may not always act rationally but still within the bounds of what is considered normal behavior. Normal individuals tend to be influenced by cognitive biases, regret, and difficulties in self-control. The concept of behavioral finance is built upon by several experts who study how human behavior in financial decision-making can differ from what is assumed in traditional finance or standard finance.

Shefrin and Statman (2003) summarize the contributions of Daniel Kahneman and Amos Tversky, with Daniel Kahneman being awarded the Nobel Prize in Economics in 2002 for integrating psychological research into economics, especially for human judgment and decision-making under uncertainties. Kahneman collaborated with Amos Tversky, who passed away in 1996; they focused on studying prospect theory and heuristics, as well as biases that provide basic insights into psychology with the concepts of risk and return in finance (Kahneman & Tversky, 2013; Tversky & Kahneman, 1974).

Behavioral finance emerged as a theory that opposes traditional financial theory, known as standard finance (Shefrin, 2002). The standard finance concept assumes that the market is efficient, meaning that prices already reflect available information, and people in standard finance are rational (Statman, 1995). According to Pompian (2012), standard finance is fundamentally based on rules governing investor behavior rather than on concepts that explain actual behavior. In contrast, behavioral finance explains the actual behavior of investors in financial markets where investors tend to be irrational because humans can be influenced by psychology, cognition, and emotion that can affect investment decisions.

Cognitive Biases

Cognitive biases are discrepancies in understanding, processing, and decision-making against information or facts (Pompian, 2012). Cognitive biases stem from human rationality limitations, as heuristic theory explains as shortcuts the brain uses in processing information without fully processing it, resulting in cognitive biases. Otuteye and Siddiquee (2015) argue that cognitive biases can lead to judgment errors that result in poor final decisions.

According to Pompian (2012), cognitive biases are divided into two: the first is belief preference biases, where individuals irrationally hold on to existing or newly formed beliefs, often justifying them because of self-belief or personal ideal biases. The second is related to how individuals illogically or irrationally process information in financial decision-making. Belief preference biases include conservatism, confirmation bias, representativeness, illusion of control, hindsight, and cognitive dissonance. Meanwhile, how individuals process information includes anchoring and adjustment, mental accounting, framing, availability, self-attribution, outcome, and recency.

Herding behavior

According to Parikh (2009), herding behavior is a form of bias based on the availability heuristic. Herding behavior is when people tend to follow what others are doing. Even though it might be wrong, they feel the action is more correct or safer because many people are doing it. According to Pompian (2012), herding behavior is the tendency to use the behavior of others as input in decision-making, which, on a large scale can impact significant changes in financial markets.

Confirmation Bias

Confirmation bias is the natural tendency of humans to seek evidence that confirms their beliefs rather than evidence that contradicts them (Thaler, 2015). Another definition from Bazerman and Moore (2012) defines confirmation bias as the tendency to seek and interpret information that matches pre-existing views. According to Dhami & Sunstein (2022), individuals with confirmation bias tend to

seek evidence that strengthens their beliefs, thus ignoring contradicting evidence.

Bounded Rationality

According to Simon (2000), humans have limited rationality. Therefore, in decision-making processes, humans assess their cognitive limitations, whether in knowledge or computational capacity. In financial decision-making, people cannot always maximize profits due to a lack of knowledge, cognitive ability, and time. Another definition of bounded rationality highlights decision-making analysis when individuals lack the cognitive capacity needed to make optimal decisions due to complexity (Mallard, 2015). Hence, humans in financial decision-making cannot always act rationally due to bounded rationality.

Heuristic

Shah and Oppenheimer (2008) define heuristics as a practical rule used to make decisions more easily and quickly by simplifying the complexity of information and cognitive abilities. Another definition proposed by Parikh (2009) refers to heuristics as the cognitive process where the brain uses shortcut strategies in processing information, which sometimes leads to cognitive biases because the information is not fully processed.

According to Tversky and Kahneman (1974), although using heuristics can be helpful in speeding up decision-making, it can also lead to errors by simplifying complex judgments. In decision-making, humans tend to use several heuristics: representativeness heuristic, availability, and anchoring. First, the representativeness heuristic is the tendency to make judgments or conclusions from a small sample to represent a larger population and based on how similar an object or situation is to a specific category in an individual's mind (Kahneman & Frederick, 2002).

Second, Tversky and Kahneman (2013) define the availability heuristic as our tendency to assess events based on how easily we can recall relevant information that comes to mind. Bazerman and Moore (2012) argue that the human brain is more effective remembering interesting information, emotionally triggering, or recently acquired. Thus, in practice, the availability heuristic can trigger biases that appear to be a natural function of human memory selection.

Third, the anchoring heuristic is the tendency in decision-making where individuals use an initial value as a reference for making estimates or judgments but often make inadequate adjustments, causing the results to be overly influenced by the initial value (Tversky & Kahneman, 1974). In the context of decision-making, these three main heuristics describe how humans often use practical rules to make quick decisions.

The Influence of Herding Behavior on Generation Z Investment Decisions

Park and Kim (2017) define herding behavior as the tendency to follow others' actions. This behavior is further reinforced by the widespread penetration of social media among Generation Z, where investment-related information is easily found and significantly influences their investment decisions (Rudin, 2019). Generation Z, a generation highly connected to social media, integrates digital technology into various aspects of their lives, which also strengthens the influence of herding behavior in the context of investment decision-making among Generation Z (Roberts et al., 2014).

The influence of peers and influencers recommending an investment causes other investors to follow their investment actions (Rahayu et al., 2021). According to CNBC Indonesia, Sidik (2021) reported an interesting event in the stock world where there was a 7.84% increase in the stock price of PT Bali Bintang Sejahtera Tbk (BOLA), a football company, after Kaesang Pangarep, the son of the President of Indonesia, Joko Widodo, bought shares and shared a photo with the company owner captioned "deal" for investment. This indicates that Kaesang Pangarep's Instagram followers engaged in herding behavior. As Kaesang Pangarep is a well-known influencer in Indonesia and most internet users and capital market investors are from Generation Z, the stock increase is suspected to be related to the actions of his followers, most likely young Generation Z investors. A study by Rosdiana (2020) on herding behavior among Generation Z and Millennials found that herding behavior significantly influences investment decisions. Another study by Afriani and Halmawati (2019) showed that herding behavior has a positive and significant influence on investment decision-making. Based on the description above, the author develops the following hypothesis.

H1: Herding behavior affects Generation Z investment decisions.

The Influence of Confirmation Bias on Generation Z Investment Decisions

Pompian (2012) defines confirmation bias as a tendency to seek information that only supports personal beliefs. As a primary source of information for Generation Z, social media strengthens this tendency (Parikh, 2009). Additionally, social media algorithms can present information that aligns with what users want to see, reinforcing confirmation bias in investment decision-making (Zimmer et al., 2019). According to Schiffer (2019), social media algorithms can increase confirmation bias by showing users only information that matches their interests, reducing their access to opposing viewpoints. This makes Generation Z pay attention only to information that aligns with their beliefs, which can affect investment decision-making (Holmes, 2016). Previous research by Rose and Armansyah (2022) found that confirmation bias significantly influences investor decisions. Another study by Cheng (2018) shows that confirmation bias affects investment decisions in that people often seek and read information that supports their beliefs while ignoring contradictory information. Based on the description above, the author develops the following hypothesis.

H2: Confirmation bias influences investment decisions among Generation Z.

Gender as a Moderating Variable

Gender is a concept that differentiates between males and females biologically and shaped by culture, society, and environment (Bussey & Bandura, 1999). According to the masculine culture proposed by Hofstede (1986), men tend to be more ambitious, assertive, and competitive. Additionally, the masculine culture, which has been established since ancient times, views the role of women as one of serving and managing non-material matters such as child-rearing and other minor tasks. These differences that shape males and females can lead to differences in various aspects of life, including decision-making. A previous study by Putri and Mulyani (2023) found that gender roles influence herding behavior in investment decisions, with male investors tending to exhibit herding behavior more than female investors. Based on the above explanation, the author develops the following hypothesis. Previous research has shown that behavioral finance factors such as confirmation bias significantly influence on investment decisions, and that gender plays a role in investment decisions (Jaiswal & Kamil, 2012). This study found that men tend to be more biased in making investment decisions than women, who tend to be more cautious in investing. Based on the above explanation, the author develops the following hypothesis.

H3: Gender moderates the relationship between herding behavior and investment decisions among Generation Z.

H4: Gender moderates the relationship between confirmation bias and investment decisions among Generation Z.

RESEARCH METHOD

This research uses a quantitative approach to analyze the extent to which independent variables influence the dependent variable. Sujarweni (2015) explains that quantitative research is a type that yields findings that can be obtained using statistical procedures or other methods of quantification.

Population is a general area that includes objects or subjects with established specific characteristics (Sugiyono, 2019). The population for this research includes all Generation Z investors who were born between 1995 and 2012 at the Faculty of Economics and Business, Universitas Klabat.

Sample is a portion of the population, which may consist of a group of people, objects, or events that accurately represent the characteristics of the entire population (Gay et al., 2012). This study uses purposive sampling to select the sample, with the criteria being students of the Faculty of Economics and Business at Universitas Klabat, who fall into the category of Generation Z born between 1995 and 2012 and have either previously invested or are currently investing. After distributing the survey, a total of 83 samples met the criteria.

This research uses primary data, which was collected through surveys with variable measurements using a Likert scale (1-5). The herding behavior construct consists of 5 constructs, following (Waweru et al., 2008). The measurement of the confirmation bias variable consists of 4 constructs, following (Armansyah, 2023). The measurement of the investment decision variable consists of 3 constructs, following (Phuoc Luong & Thi Thu Ha, 2011).

This study conducts descriptive tests to provide a general overview of the characteristics of the data related to the research variables, such as mean, median, and standard deviation. In addition, a correlation test is conducted to measure the relationships between variables. This research uses linear

regression to test the hypotheses. Two models of testing to test hypotheses 1 through 4 are conducted using multiple regression. To test hypotheses 1 & 2, the following regression model is used.

$$Y = \sigma 1 + \beta 1HB + \beta 2CB + \varepsilon \quad (1)$$

Where:
Y = Investment Decision
σ1 = Constant
HB = Herding Behavior (X1)
CB = Confirmation Bias (X2)
ε = Error

To test hypotheses 3 & 4, the following multiple regression model is used:

$$Y= \sigma 1 + \gamma 1HB + \gamma 2CB + \gamma 3G + \gamma 4G*HB+ \gamma 5G*CB + \varepsilon \quad (2)$$

Where:
Y = Investment Decision
σ1 = Constant
HB = Herding Behavior (X1)
CB = Confirmation Bias (X2)
G = Gender, a dummy variable 1 represents male and 0 represents female
γ = Coefficient
ε = Error

Through multiple regression testing, hypothesis 1 is accepted if the p-value of coefficient β1 is less than or equal to the alpha level (0.05), and hypothesis 2 is accepted if the p-value of coefficient β2 is less than or equal to the alpha level (0.05). Hypothesis 3 is accepted if the p-value of coefficient γ4 is less than the alpha level (0.05), and hypothesis 4 is accepted if the p-value of coefficient γ5 is greater than the alpha level (0.05). SPSS software version 26.0 was used for data analysis, including hypothesis testing, correlation, and descriptive analysis. Additionally, demographic factors such as social media usage, gender, age, major, academic level, and investment instrument choices were analyzed to gain a deeper understanding of the demographic factors in this study.

In this research, gender moderation was tested using a dummy variable to determine whether gender plays a role as a moderator between x1 and x2 in relation to y. In this test, males were coded as 1, and females were coded as 0, in line with the research objective of examining whether males are more prone to bias in investment decisions. The use of this dummy variable allows for a more in-depth analysis of the influence of gender in moderating the relationships between these variables.

RESULTS AND DISCUSSION

The characteristics of the respondents can be seen in Table 1 below, which provides demographic data of the 83 respondents. It shows that all 83 respondents (100%) are active social media users, where the average value (mean) indicates that active social media users tend to have a higher confirmation bias than herding behavior. This means that all active social media users tend to seek information that only supports their personal views and tend to ignore information that contradicts their beliefs.

In terms of gender demographics, the number of males who filled out the questionnaire is 47 (57%), while females are 36 (43%). Based on the mean value, it is observed that in terms of gender demographics, males tend to have a higher confirmation bias than herding behavior. On the other hand, females tend to have higher herding behavior than confirmation bias in making investment decisions. The comparison of mean values between males and females shows that females tend to have higher herding behavior and confirmation bias than males.

In terms of age, the number of respondents who filled out the questionnaire in the age range of 16-21 years is 59 people (71%). Meanwhile, the number of respondents in the age range of 22-27 years is 24 people (29%). Based on the mean value, respondents in the 16-21 age range tend to exhibit herding behavior. In contrast, respondents in the 22-27 age range tend to have confirmation bias in making investment decisions. When compared, respondents aged 16-21 years tend to have both higher herding behavior and confirmation bias than respondents aged 22-27 years.

Table 1. Respondent Characteristics

Demographics	Level	Total	Percentage	Mean	
				HB	CB
Social Media Users	Active	83	100%	3.1783	3.2830
	Inactive	-	-	-	-
Gender	Male	47	57%	3.1064	3.1702
	Female	36	43%	3.2722	3.2014
Age	16-21 Years	59	71%	3.2542	3.2119
	22-27 Years	24	29%	2.9917	3.1146
Major	Accounting	38	46%	3.4053	3.1118
	Management	45	54%	2.9867	3.2444
	Year 1	10	12%	3.4600	3.3500
	Year 2	20	24%	3.0600	3.2750
Year	Year 3	33	40%	3.1939	3.0530
	Year 4	20	24%	3.1300	3.2250
	Stocks	52	63%	3.2577	3.1875
Investment Instrument Choices	Deposits	19	23%	3.2211	3.1184
	Bonds	1	1.2%	2.2000	3.5000
	Others	13	13.3%	2.8182	3.2500

Source: Data Processing Result with SPSS 26.0

From the perspective of major demographics, respondents majoring in accounting total 38 people (46%), while those majoring in management total 45 people (54%). Based on the mean value, respondents majoring in accounting tend to exhibit herding behavior more than confirmation bias, while respondents majoring in Management tend to have confirmation bias more than herding behavior in making investment decisions. This means that accounting students in this study are more likely to follow others' behavior in making investment decisions, while management students are more likely to seek information that supports their beliefs and ignore information that contradicts their beliefs.

Based on the level of respondents as students of the Faculty of Economics and Business at Universitas Klabat, the number of respondents in the first year is 10 people (12%), second year 20 people (24%), third year 33 people (40%), and fourth year 20 people (24%). From the mean values, first-year respondents tend to have higher herding behavior compared to confirmation bias. Meanwhile, second-year respondents tend to have higher confirmation bias than herding behavior. Furthermore, third-year respondents tend to exhibit higher herding behavior than confirmation bias. Lastly, fourth-year respondents tend to have higher confirmation bias than herding behavior.

In selecting investment instruments, stocks are the most chosen investment instrument by the respondents, with 52 people (63%) opting for them. The number of respondents investing in deposits is 19 people (23%), while the choice of investing in bonds was selected by only 1 person (1.2%). Other unknown investment choices were selected by 13 respondents (13.3%). From the mean values, respondents who invest in stocks and deposits tend to exhibit herding behavior, which means they are more likely to follow others in making investment decisions. Meanwhile, respondents who choose bonds and other investment instruments tend to have confirmation bias, which means in making investment decisions, they tend to seek information that only supports their beliefs and ignore information that contradicts them.

Statistical Analysis of Respondents

Based on Table 1 below, the minimum value of the data is 1 and the maximum is 5, representing the smallest and largest values in the respondents' answers, which were measured using a Likert scale (1-5). The mean value is obtained from the average score of respondents who filled out the questionnaire. If the mean value is close to 5, it indicates that the respondents have a strong bias, whereas if the mean value is close to 1, it indicates that the respondents have a weak bias.

The mean value for herding behavior is 3.178313, indicating that respondents tend to follow others in making investment decisions. The mean value for confirmation bias is 3.183713, meaning that respondents tend to seek information that supports their personal beliefs and ignore conflicting information. The mean value for investment decisions is 3.425703, which suggests that respondents' investment decisions, when compared to the market, reflect a fairly good level of satisfaction. When comparing the mean values, respondents exhibit a greater tendency towards confirmation bias than

herding behavior. This means that in making investment decisions, respondents are more likely to have confirmation bias than herding behavior, meaning they tend to seek information that only supports their beliefs and ignore contradictory information. Additionally, the standard deviation for herding behavior is 0.69704, for confirmation bias is 0.750086, and for investment decisions is 0.821977, indicating that most respondents' answers are not far from the average value.

Tabel 2. Descriptive Statistics of Respondents

	N	Minimum	Maximum	Mean	Std. Deviation
Herding Behavior	83	1	5	3.178313	0.69704
Confirmation Bias	83	1	5	3.183735	0.750086
Investment Choice	83	1	5	3.425703	0.821977
Valid N (listwise)	83				

Source: Data Processing Results with SPSS 26.0

Variable Correlation Analysis

The results of the correlation test, as shown in Table 3 below, indicate that the variable X1 (herding behavior) and the variable Y (investment decision) have a very weak positive correlation. This means that there is a tendency for the higher the herding behavior, the higher the investment decisions in terms of investors assessing the achievement of investment goals, comparison of return rates, and personal investment satisfaction. Although this relationship is positive, its strength is very weak, making it unreliable as a primary factor in predicting investment decisions among Generation Z.

Table 3. Correlation Test Results

	Correlation	Sig. (2-tailed)	N	Description
Herding Behavior	0.038	0.0736	83	Very Weak
Confirmation Bias	0.448	0.000	83	Moderate
HB, CB	-0.065	0.562	83	Very Weak
HB, Gender	0.051	0.645	83	Very Weak
CB, Gender	0.173	0.118	83	Very Weak

Source: Data Processing Results with SPSS 26.0

The variable X2 (confirmation bias) has a moderate positive correlation with the variable Y (investment decisions among Generation Z). This means that the higher the X1 (herding behavior), the higher the Y (investment decisions) in terms of how investors assess the achievement of investment goals, comparison of return rates, and personal investment satisfaction. This relationship is positive and of moderate strength, indicating that confirmation bias is one of the factors that can influence investment decisions.

The variable X1 (herding behavior) has a very weak negative correlation with X2 (confirmation bias). In this case, the very weak negative correlation indicates that there is no consistent pattern where herding behavior directly leads to an increase or decrease in confirmation bias, or vice versa. In other words, herding behavior and confirmation bias are not related to each other, and in fact, their differences suggest that if herding behavior increases, confirmation bias decreases.

The gender variable, as a moderating variable between X1 (herding behavior) and Y (investment decisions among Generation Z), has a very weak positive correlation. This means that although there is a positive relationship as a moderation between herding behavior and investment decisions, the relationship is not strong enough to effectively moderate the impact of herding behavior on investment decisions among Generation Z. In other words, gender is not strong enough to moderate the relationship between herding behavior and investment decisions among Generation Z.

The gender variable, as a moderating variable between X2 (confirmation bias) and Y (investment decisions among Generation Z), has a weak positive correlation. This indicates that although there is a positive relationship as a moderation between confirmation bias and investment decisions, gender is not strong enough to effectively moderate the relationship between confirmation bias and investment decisions among Generation Z.

Table 4. Multiple Regression Results

	Model 1		Model 2	
	Coefficient	Sig. Value	Coefficient	Sig. Value
Constant	4.786	0.004	4.777	0.097
Herding Behavior (HB)	0.047	0.505	-0.025	0.850
Confirmation Bias (CB)	0.372	0.000***	0.452	0.008***
Gender			-0.178	0.959
Gend*Herd			0.106	0.502
Gend*Conf			-0.192	0.614
Model 1, Adj. $R^2 = 0.186$				
Model 2, Adj. $R^2 = 0.165$				
***Sig. at 1%				

Source: Data Processing Results with SPSS 26.0

Based on Table 4 above, the results of hypothesis testing using the t-test can be obtained. In the first test with model 1, the first hypothesis (H1) is that herding behavior influences the investment decisions of Generation Z. However, the t-test results show a significance value of 0.505 > 0.05. This means that herding behavior does not have a significant influence on investment decisions among Generation Z. Therefore, it can be concluded that H1, which states that herding behavior affects investment decisions among Generation Z, is rejected. This implies that in making investment decisions, Generation Z does not tend to follow others in their investment decision-making. As such, this result does not align with the previous study by Afriani and Halmawati (2019), which found that herding behavior does influence investment decisions.

The second hypothesis (H2) states that confirmation bias affects the investment decisions of Generation Z. Based on the t-test results, the significance value is 0.000 < 0.05. This indicates that confirmation bias has a significant influence on the investment decisions of Generation Z. Therefore, it can be concluded that H2, which states that confirmation bias influences investment decisions among Generation Z, is accepted. This means that in making investment decisions, Generation Z investors tend to exhibit confirmation bias, where they seek information that reinforces their beliefs and ignore information that contradicts their beliefs. This result is consistent with the previous study by Cheng (2018), which found that confirmation bias influences investment decisions.

In the second model test, the third hypothesis (H3) is that gender plays a moderating role between herding behavior and the investment decisions of Generation Z. Based on the t-test results, a significance value of 0.502 > 0.05 was obtained. This means that gender does not moderate the relationship between herding behavior and investment decisions among Generation Z. Therefore, it can be concluded that H3, which states that gender moderates the relationship between herding behavior and investment decisions among Generation Z, is rejected. This result does not align with the findings of Putri and Mulyani (2023), who found that gender influences herding behavior in investment decisions, with male investors tending to exhibit more herding behavior than female investors.

The fourth hypothesis (H4) is that gender plays a moderating role between confirmation bias and the investment decisions of Generation Z. Based on the t-test results, a significance value of 0.614 > 0.05 was obtained. This means that gender does not moderate the relationship between confirmation bias and the investment decisions of Generation Z. Therefore, it can be concluded that H4, which states that gender moderates the relationship between confirmation bias and the investment decisions of Generation Z, is rejected. This implies that although there are differences in preferences and tendencies between males and females, other factors may play a more significant role in moderating the relationship between herding behavior and investment decisions among Generation Z. This result is not consistent with the previous study conducted by Jaiswal and Kamil (2012), which found that gender plays a role in moderating the relationship between confirmation bias and investment decisions, with men exhibiting more biased behavior than women.

The results of this study also indicate that there are other variables that influence the investment decisions of Generation Z that were not included in this research, such as overconfidence bias, which can affect their investment decisions.

As an additional test, a Chow test was conducted to ensure the consistency of the results with previous tests. The model selection in the Chow test indicated that the Common Effect Model was the

most appropriate model to use. This test was conducted using EViews 18.0. Based on the results of this test, herding behavior did not show a significant effect on the investment decisions of Generation Z, whereas confirmation bias showed a significant effect. Furthermore, gender moderation did not influence the relationship between herding behavior and confirmation bias on the investment decisions of Generation Z. Overall, both in the initial testing using SPSS 26.0 and in the additional test with EViews 18.0, the results showed consistency in the rejection or acceptance of hypotheses based on the same significance values.

CONCLUSION

Profitable investments are the hope of all investors. However, when making investment assessments, investors can have biases that can lead to critical errors in their investments. This research is based on the theory of behavioral finance, which states that in making investment decisions, investors can be influenced by psychological factors, resulting in biased behavior. This study aims to analyze the influence of herding behavior and confirmation bias on investment decisions among Generation Z, with gender as a moderating factor.

The analysis results show that herding behavior does not significantly influence the investment decisions of Generation Z, while confirmation bias does have a significant impact. Gender does not moderate the relationship between herding behavior or confirmation bias and the investment decisions of Generation Z. This means that Generation Z investors in the Faculty of Economics and Business at Universitas Klabat tend to exhibit confirmation bias in their investment decision-making. They tend to seek information that reinforces their beliefs and ignore conflicting information. The role of social media, which has become an identity marker for Generation Z, can amplify this tendency toward confirmation bias, as investors are exposed to information tailored by algorithms to display content aligned with users' preferences. This further reinforces confirmation bias behavior among Generation Z investors.

A descriptive analysis was conducted to examine the demographics of the respondents. The results show that all respondents were identified as active social media users, and they tend to exhibit confirmation bias in their investment decision-making. From a gender perspective, males tend to have confirmation bias, while females are more likely to display herding behavior. Based on age, respondents aged 16-21 tend to have herding behavior, whereas those aged 22-27 are more inclined toward confirmation bias in their investment decision-making. In terms of academic major, respondents from the accounting department are more likely to exhibit herding behavior, while those from the management department tend to have confirmation bias in their investment decisions. Regarding academic level, first-year students tend to exhibit herding behavior, second-year students tend to have confirmation bias, third-year students tend to exhibit herding behavior, and fourth-year students tend to have confirmation bias in their investment decisions. In terms of the type of investment, respondents who invest in stocks and deposits tend to exhibit herding behavior, while those who invest in bonds and other types of investments tend to display confirmation bias in their investment decisions.

Thus, through this research, it is hoped to provide Generation Z investors with an understanding of herding behavior and confirmation bias, which can help them be more cautious in making investment decisions. They need to access information wisely and avoid closing themselves off from information that does not align with their beliefs. Additionally, awareness of behavioral differences based on gender, age, major, education level, and type of investment is also important to make better investment decisions. For issuers, understanding the characteristics and behavior of Generation Z investors can help them develop more effective marketing and communication strategies to attract Generation Z to invest in their stocks through social media platforms.

REFERENCES

Afriani, D., & Halmawati, H. (2019). Pengaruh cognitive dissonance bias, overconfidence bias dan herding bias terhadap pengambilan keputusan investasi (Studi empiris pada mahasiswa fakultas ekonomi universitas negeri padang yang melakukan investasi di bursa efek Indonesia). *Jurnal Eksplorasi Akuntansi (JEA)*, *1*(4), 1650–1665. https://doi.org/https://doi.org/10.24036/jea.v1i4.168

Armansyah, R. F. (2023). Herd instinct bias, emotional biases, and information processing biases in investment decisions. *Jurnal Manajemen Dan Kewirausahaan*, *24*(2), 105–117. https://doi.org/https://doi.org/10.9744/jmk.24.2.105-117

Bales, R. F., & Parsons, T. (2013). *Family: Socialization and Interaction Process*. Routledge. https://doi.org/https://doi.org/10.4324/9781315824307

Bazerman, M. H., & Moore, D. A. (2012). *Judgment in Managerial Decision Making*. John Wiley & Sons, Inc.

Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychology Review*, *106*(4), 676–713. https://doi.org/https://doi.org/10.1037/0033-295X.106.4.676

Cheng, C. (2018). Confirmation bias in investments. *International Journal of Economics and Finance*, *11*(2), 50. https://doi.org/https://doi.org/10.5539/IJEF.V11N2P50

Dhami, S., & Sunstein, C. R. (2022). *Bounded Rationality: Heuristics, Judgment, and Public Policy*. Westchester Publishing Services.

Fama, E. F. (1965). The behavior of stock-market prices. *The Journal of Business*, *38*(1), 34–105. https://www.jstor.org/stable/2350752

Gay, L. R., Mills, G. E., & Airasian, P. W. (2012). *Educational Research : Competencies for Analysis and Applications*. Pearson.

Hofstede, G. (1986). Cultural differences in teaching and learning. *International Journal of Intercultural Relations*, *10*(3), 301–320. https://doi.org/https://doi.org/10.1016/0147-1767(86)90015-5

Holmes, R. (2016, August 12). The problem isn't fake news, it's bad algorithms—here's why. *Observer*. https://observer.com/2016/12/the-problem-isnt-fake-news-its-bad-algorithms-heres-why/

Jaiswal, B., & Kamil, N. (2012). Gender, behavioral finance and the investment decision. *Business Review*, *7*(2), 8–22. https://doi.org/https://doi.org/10.54784/1990-6587.1201

Kahneman, D., & Frederick, S. (2002). Representativeness revisited: attribute substitution in intuitive judgment. *New York: Cambridge University Press*, *49*(1), 49–81. https://doi.org/http://dx.doi.org/10.1017/CBO9780511808098.004

Kahneman, D., & Tversky, A. (2013). Prospect Theory: An Analysis of Decision Under Risk. In *Handbook of The Fundamentals of Financial Decision Making* (pp. 99–127). World Scientific. https://doi.org/https://doi.org/10.1142/9789814417358_0006

Mallard, G. (2015). *Bounded Rationality and Behavioural Economics*. Routledge. https://doi.org/https://doi.org/10.4324/9781315764290

Otuteye, E., & Siddiquee, M. (2015). Overcoming cognitive biases: a heuristic for making value investing decisions. *The Journal of Behavioral Finance*, *16*(2), 140–149. https://doi.org/https://doi.org/10.1080/15427560.2015.1034859

Parikh, P. (2009). *Value Investing and Behavioral Finance*. McGraw-Hill Education Pvt Limited.

Park, B.-J., & Kim, M.-J. (2017). A dynamic measure of intentional herd behavior in financial markets. *National Research Foundation of Korea Grant*, 1–34. https://mpra.ub.uni-muenchen.de/id/eprint/82025

Phuoc Luong, L., & Thi Thu Ha, D. (2011). Behavioral factors influencing individual investors´ decision-making and performance. : a survey at the Ho Chi Minh stock exchange. *Digitala Vetenskapliga Arkivet*, 1–114. https://www.diva-portal.org/smash/get/diva2:423263/FULLTEXT02.pdf

Pompian, M. M. (2012). *Behavioral Finance and Investor Types: Managing Behavior to Make Better Investment Decisions*. John Wiley & Sons.

Puspitawati, H. (2013). *Konsep, Teori dan Analisis Gender*.

Putri, F. A., & Mulyani, E. (2023). Analisis perbedaan perilaku investasi saham antara wanita dan pria di pasar modal Indonesia. *Jurnal Eksplorasi Akuntansi (JEA)*, *5*(3), 978–998. https://doi.org/https://doi.org/10.24036/jea.v5i3.752

Rahayu, S., Rohman, A., & Harto, P. (2021). Herding behavior model in investment decision on emerging markets: experimental in Indonesia. *Journal of Asian Finance, Economics and Business*, *8*(1), 53–59. https://doi.org/10.13106/jafeb.2021.vol8.no1.053

Roberts, J., Yaya, L., & Manolis, C. (2014). The invisible addiction: cell-phone activities and addiction among male and female college students. *Journal of Behavioral Addictions*, *3*(4), 1–12. https://doi.org/https://doi.org/10.1556/jba.3.2014.015

Rosdiana, R. (2020). Investment behavior in generation z and millennial generation. *Dinasti International Journal of Economics, Finance and Accounting*, *1*(5), 766–780. https://doi.org/https://doi.org/10.38035/dijefa.v1i5.595

Rose, J. B. D., & Armansyah, R. F. (2022). Recency bias dan confirmation bias pada keputusan investasi investor pasar modal Indonesia. *Jurnal Ilmiah Manajemen Dan Bisnis (JIMBis)*, *1*(2), 136–152. https://doi.org/https://doi.org/10.24034/jimbis.v1i2.5366

Rudin, A. (2019). Understanding how social media affects investor biases. *Investments & Wealth Institute, Formerly IMCA*, 40–43. https://cdn2.hubspot.net/hubfs/4812204/IWM19SepOct-SocialMediaAffectsInvestorBiases.pdf

Schiffer, Z. (2019, November 12). Networks, 'filter bubble' author Eli Pariser on why we need publicly owned social. *The Verge*. https://www.theverge.com/interface/2019/11/12/20959479/eli-pariser-civic-signals-filter-bubble-q-a

Shah, A. K., & Oppenheimer, D. M. (2008). Heuristics made easy: an effort-reduction framework. *American Psychological Association*, *134*(2), 207–222. https://doi.org/https://doi.org/10.1037/0033-2909.134.2.207

Shefrin, H. (2002). *Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing*. Oxford University Press. https://doi.org/https://doi.org/10.1093/0195161211.001.0001

Shefrin, H., & Statman, M. (2003). The contributions of daniel kahneman and amos tversky. *The Journal of Behavioral Finance*, *4*(2), 54–58. https://doi.org/https://doi.org/10.1207/S15427579JPFM0402_01

Sidik, S. (2021, March 3). Bali united bantah kaesang jadi investor, saham bola drop! *CNBC Indonesia*. https://www.cnbcindonesia.com/market/20210303122552-17-227519/bali-united-bantah-kaesang-jadi-investor-saham-bola-drop

Simon, H. A. (2000). Bounded rationality in social science: today and tomorrow. *Mind & Society*, *1*(1), 25–39. https://doi.org/https://doi.org/10.1007/BF02512227

Singh, A. P., & Dangmei, J. (2016). Understanding the generation z: the future workforce. *South - Asian Journal of Multidisciplinary Studies (SAJMS)*, *3*(3), 1–5.

Smart, S. B., & Zutter, C. J. (2020). *Fundamentals of Investing*. Pearson.

Statman, M. (1995). *Behavioral finance versus standard finance*. https://doi.org/https://doi.org/10.2469/cp.v1995.n7.4

Sugiyono, P. D. (2019). Metode Penelitian Pendidikan (Kuantitatif, Kualitatif, Kombinasi, R&D dan Penelitian Pendidikan). In *Metode Penelitian Pendidikan*. Alfabeta.

Sujarweni, V. W. (2015). *Metodologi Penelitian Bisnis & Ekonomi*. Pustaka baru press.

Tandelilin, E. (2010). Dasar-Dasar Manajemen Investasi. In *Manajemen Investasi* (pp. 1–34). https://pustaka.ut.ac.id/lib/wp-content/uploads/pdfmk/EKMA5312-M1.pdf

Thaler, R. H. (2015). *Misbehaving: The Making of Behavioral Economics*. W W Norton & Co.

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: heuristics and biases. *American Association for the Advancement of Science*, *185*(4157), 1124–1131.

Waweru, N. M., Munyoki, E., & Uliana, E. (2008). The effects of behavioural factors in investment decision-making: a survey of institutional investors operating at the Nairobi Stock Exchange. *International Journal of Business and Emerging Markets*, *1*(1), 24–41. https://doi.org/https://doi.org/10.1504/IJBEM.2008.019243

Zimmer, F., Scheibe, K., Stock, M., & Stock, W. G. (2019). Fake news in social media: bad algorithms or biased users? *Journal of Information Science Theory and Practice*, *7*(2), 40–53. https://doi.org/https://doi.org/10.1633/JISTaP.2019.7.2.4