

# Impact of Influencer Trustworthiness and Financial Literacy on Herding Behavior with Risk Perception Mediating Variables of Indonesian Millennial Investors

Herdyawan Natahadi<sup>1</sup>, Makaryanawati<sup>2</sup>, Kamarul Baraini Keliwon<sup>3</sup>

Economy & Business, Universitas Negeri Malang, Indonesia<sup>1,2</sup>

Faculty of Economics, National University of Malaysia, Malaysia<sup>3</sup>

Email: herdyawan.1904226@students.um.ac.id<sup>1</sup>, makaryanawati.fe@um.ac.id<sup>2</sup>, baraini@ukm.edu.my<sup>3</sup>

## Keywords

*Investment, Behavioural Economics, Herding Behaviour, Trustworthiness Financial Influencer, Financial Literacy.*

## ABSTRACT

The ease of investment resulted in soaring number of millennial investors in Indonesia. Most investors in Indonesia are a beginner and do not know how to invest properly. Ignorance of investment encourages investors to find information and looking for role model then commonly leads to herding behaviour. This habit contradicts with traditional finance theory where investors supposed to invest rationally and avoid risk. This study will further explore the relationship between trustworthiness of financial influencers and financial literacy on herding behaviours with risk perception as mediating variables in millennial investors in Indonesia. Based on path analysis resulting the variable significantly influence each other directly or indirectly through mediating variable. Direct effect of trustworthiness financial influencer positively related with the herding behaviour, but the financial literacy negatively related with the herding behaviour. Indirectly Financial literacy level increased to increase risk perception and trustworthiness financial influencer vice versa. The decrease of risk perception leads millennial investor to herd and the increase of risk perception make investor more careful to make investment. There are still 33% of other factors influenced outside this study, for example gender, age, income, occupation and many other. Prior study has not examined the impact of a millennial follower's trust on influencers to herding behaviours using risk perception as a mediating variable.

## INTRODUCTION

Investment is extremely easy for millennials to do, because of the advancement of digitalization that makes it easier for someone to invest. The ease of investing is illustrated in the demographic data of the Indonesian Central Securities Depository (KSEI); 80 percent of all investors in Indonesia are still beginners with less than three years of investment experience. Of the total investors, 59 percent are under 30 years old and the majority have a final education equivalent to high school (KSEI, 2022). Observations by Investor Specialists prove that many investors still follow the choices of other investors in investing (Dirgantara, 2021). The phenomenon of investors following the choices of other investors in investing is in line with millennials liking to follow trends. Millennials on social media are motivated to invest through various approaches such as educational content, films, and hedonism (Gross & Wangenheim, 2018). Human instincts tend to follow what others do, call herding behaviors, when unaware of something and afraid of making mistakes. Most ordinary investors in Indonesia are millennials who do herding because investing is not based on personal analysis (Hayat, 2016).

Herding Behaviours carried out by investors are contrary to traditional finance theory; this theory explains investor behaviors will always be rational and risk-averse in investing (Neumann &

Morgenstern, 1945). In traditional finance theory, investors will conduct technical and fundamental analyses before making the right decision. Decision making involves a psychological role that causes the emergence of Herding Behaviours. Herding behaviors is one part of the theory of behavioral biases that explains a person's decision to invest is irrational and common (Kahneman & Tversky, 2012; M. et al., 1985; Shefrin & Statman, 1985; Skinner, 1987).

Most investors do not think about risk in investing and rely on emotions, so the decisions taken become irrational and cause bias (Viriyajaya & Handoyo, 2022). Before deciding something, human instincts make perception. Perception influences investors to assess the risk of investment instruments based on personal understanding and experience Field (Ademola et al., 2019). In Indonesia, investor interest in investing is very high, but the risk perception is low (Rachi & Sari, 2021). Low risk perception makes investors easily influenced without thinking about the risk, end up making decisions irrationally and causing bias (Ahmad & Shah, 2022).

Risk perception is not the only aspect that causes irrational decisions; besides risk perception, social media are free to share information. The freedom to share information on social media allows anyone to share their point of view (Framing) and creates Framing bias as long as it is supported by popularity and credibility (Legendre & Baker, 2021) Any framing on social media is commonly called sentiment (Shefrin, 2002) Sentiments can be shared without requiring prior validation which causes a lot of information spread to be fake news or hoaxes (Tchakounté et al., 2022) Hoax sentiment will plunge investors into taking fraudulent investments or in Indonesia called "Saham gorengan" so that they loss investing in it (Putra, 2021). In addition to risk, sentiment has the advantage of predicting stock price movements with an accuracy of 60% (Nguyen et al., 2015) Social media sentiment not only predicts but is proven successful in increasing stock prices and influencing followers (Pratama et al., 2022) Sentiment penetration is more effective if it is spread by people who have considerable followers and influence in society or are now referred to as influencers (Myers, 2021). Influencers do not frontally incite their followers but implicitly incite through flexing to educational content.

Investors make decisions based on the information obtained. Investors will consider the information obtained with an understanding and perception of individual risk Fields (Sha & Ismail, 2021). The level of financial literacy influences the understanding and perception of an investor. By having a better level of financial literacy, investors would make better decisions in investing (Kumar et al., 2022) Generally, investors with good financial literacy make investment decisions with a lot of consideration (Shen, 2014)

Social media helps everyone get the latest information and learn without needing education. An influencer can easily share, influence, or even teach his followers even if the information shared is wrong and aims for the influencer's personal benefit. Social media algorithms that always display trending content will indirectly create a framing bias in the audience. Framing formed by influencer sentiment on social media encourages audiences to do herding behaviors. Several previous studies have studied herding behaviors, herding habits are very influential on investment decisions and emphasize that every investor in the capital market is irrational in investing (Madaan & Singh, 2019; Rahayu et al., 2021). However, other studies explain that the better a person's financial literacy, the more rational their investment decisions will be (Budiwati et al., 2020; Lebdaoui et al., 2021). This study wanted to find out more about the influence of influencer credibility and investor financial literacy on herding behaviors with risk perception as a mediation variable.

The benefit of this study theoretically is contributing to the development of literature on herding behaviours and the factors that influence it, especially in the context of investor risk perception. In addition, this study can provide better information and understanding of the influence of financial influencer sentiment and the level of financial literacy on the herding behaviors of millennial investors in Indonesia. Expected by a researcher that the results of this study can be a reference and guide for future studies in examining factors that influence herding behaviors and in developing strategies to reduce herding risk in the Indonesian capital market. Furthermore, the practical benefits of this research

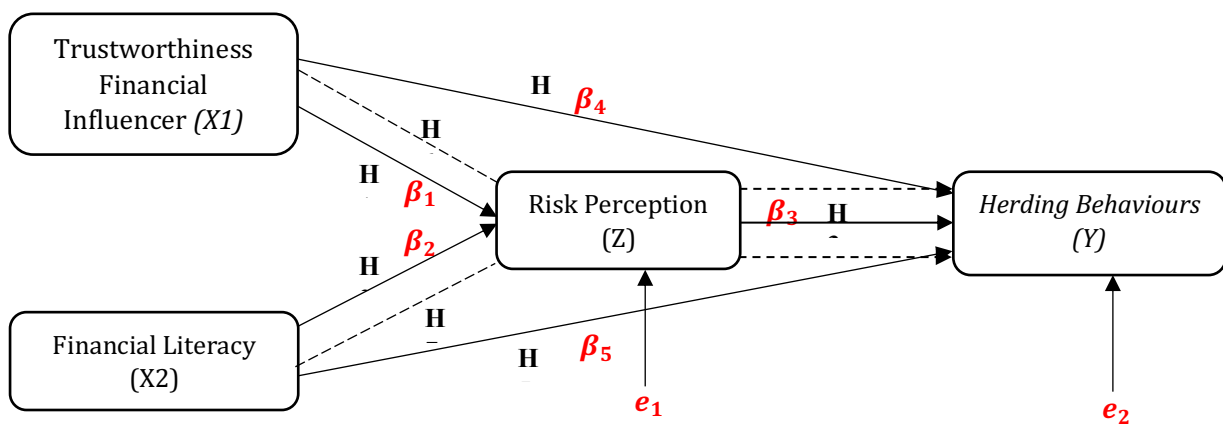
will be an insight for investors to analyze the content uploaded on social media more deeply and not just follow the trends.

**METHODS**

**Research Design**

The research design implemented in this study is an explanatory research that aims to explain the confusion and influence between the variables studied (Sugiyono, 2017) This study used quantitative methods with survey methods used to find variable relationships using data taken from samples (Dolet, 2019).

This study aims to discover the Impact of Financial Influencer Credibility and Financial Literacy Level on Herding Behaviours with Risk Perception Mediation Variables of millennial investors, as seen in [Figure 1]. This quantitative research uses survey methods and statistical analysis to assess hypotheses.



Source: Property of the author's

Figure 1. Research Diagram

**Notes:**

- ▶ : Effect without mediation variables      β: Beta
- ▶ : Influence through mediation variables      e: error value
- H** : Hypothesis

**Population and Research Sample**

The population in this study is the followers of @rivan.kurniawan Instagram account as certified investment service owners, @lukas\_setiaatmaja the founder of the hungry stock community as well as lecturers, street investment, an investment book author, @mang.amsi as OJK 2022 sharia capital market figure, @ellenmay\_official as representative of investment managers and certified trainers, and the largest @ngerti.saham whose owners are initiators of the novice stock investor community who continue to encourage campaigns to invest in the capital market. The selection of several accounts is through the researchers' observations regarding the consistency of these accounts in sharing content about stocks and the record of the account owner, not just financial tips. The sample was taken using a convenience sampling method by screening the followers of several financial influencers' Instagram accounts. Sample screening was conducted using questions of birth year, what platform was used to invest, and Instagram profile observation. Furthermore, to determine the number of samples in this study, it is calculated using the Cochran formula to estimate how many samples are needed (Cochran, 1963; Uakarn, 2021). Through calculations of the Cochran formula (1) where n is the number of samples required, e squared is the margsignificance level. Since the population of millennial investors that follow

financial influencers is unknown and a margin of error of 10%, the authors decided to use at least one hundred samples in the study.

Data collection was conducted using questionnaires measured using Likert scales. Likert scale is a measurement scale developed by Rensis Likert (Likert, 1932). Likert scales 1 to 5 measure a subject's response to a statement. The questionnaire used in this study adapts previous research, indicators and questions seen in [Appendix I]. The questionnaire was created using a Google Form distributed online via Direct Message and Personal Chat to followers who are potentially active in investing through social media account posts, as shown in [Appendix II].

The data collected after distributing questionnaires to followers of financial influencers was 147 respondents. The respondent data disaggregated again regarding this research focused on a millennial. A Millennial is someone born between 1980 and 2000 (Jamal et al., 2023; Jones, 2021). There are twenty-four respondents born after 2000 attached in [Table 1].

**Table 1. Respondent year of birth**

<b>Year of Birth</b>	<b>Amount</b>	<b>Percentage</b>
Total Respondent	147	100%
Above 2000	24	14,46%
Below 1980	0	0,00%
<b>Millennials</b>	<b>123</b>	<b>74,10%</b>

**Source: Property of the author's**

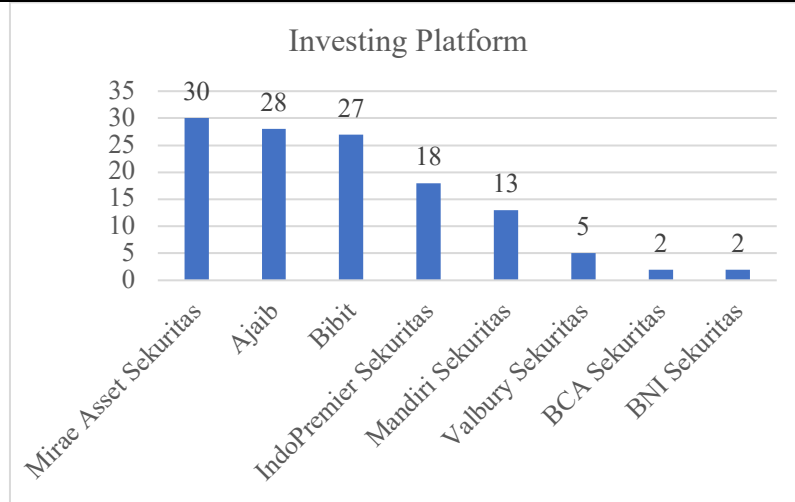
The number of usable samples reduced to 123, but only 111 respondents met the criteria as a millennial investor to conduct this study. This data seen on [Table 2].

**Table 2. Respondent Investment Profile**

<b>Criteria</b>	<b>Amount</b>	<b>Percentage</b>
Millennials	123	100%
Not a Millennial investor	12	10%
<b>Millennial Investor</b>	<b>111</b>	<b>90%</b>

**Source: Property of the author's**

From the sample of millennials, it is necessary to reconfirm that they are an investor by asking what investment platform used on [Figure 2],



**Figure 2. Investing platform used by respondent**

**Source: Property of the author's  
Research Data Analysis**

**1. Validity and Reliability Test**

The first step taken in measuring the validity of the variables used is to use the SPSS 23 application to get the calculated r value. Furthermore, the value of r table obtained will be compared with r table, if r value higher r table then the questions or statements on the questionnaire can be used in research (Ghozali, 2021).

In this study, the Pearson analysis test produced a calculated R value that varied from the lowest having a value of 0.533 to the highest with a value of 0.737 which compared with the table R value as listed in [Table 3]. The Pearson correlation value of every variable is above the critical value of this study is 0.185 based on 111 samples and a margin of error of 0.5. So, it stated that the data used in this study are all valid.

**Table 3. Validity test using Pearson Correlation**

Variable	Item	Pearson Correlation	Sig.
Y	Y1	0,722	0,000
	Y2	0,672	0,000
	Y3	0,693	0,000
	Y4	0,737	0,000
	Y5	0,643	0,000
X1	X1.1	0,577	0,000
	X1.2	0,549	0,000
	X1.3	0,648	0,000
	X1.4	0,749	0,000
	X1.5	0,659	0,000
	X1.6	0,680	0,000

X2	X2.1	0,645	0,000
	X2.2	0,664	0,000
	X2.3	0,572	0,000
	X2.4	0,533	0,000
	X2.5	0,720	0,000
	X2.6	0,621	0,000
	X2.7	0,655	0,000
	X2.8	0,665	0,000
	X2.9	0,663	0,000
	X2.10	0,655	0,000
Z	Z1	0,685	0,000
	Z2	0,681	0,000
	Z3	0,613	0,000
	Z4	0,625	0,000
	Z5	0,590	0,000

**Source: Property of the author's**

Move on, reliability tests conducted using SPSS 26 to obtain Cronbach's alpha value. The variable will be declared reliable when Cronbach's alpha value greater than 0.70 (Ghozali, 2021). The results of the Cronbach alpha analysis test show a very satisfactory value as seen on [Table 4]. The value of Cronbach alpha in these findings is greater than 0.70 so the data declared reliable.

**Table 4. Reliability test using Cronbach Alpha**

Variable	N of Item	Cronbach Alpha
Y	5	0,725
X1	6	0,717
X2	10	0,838
Z	5	0,734

## 2. Classical Assumption Test

Referring to the book by Ghozali (2021), in conducting classical assumption tests, three test methods must be conducted. The first test method is the Kolmogorov-Smirnov test, which is a test to evaluate the normality of data distribution if the value of asymptotic significance obtained is greater than 0.05. The Normality Test in this study used Kolmogorov Smirnov Test analysis. The test was conducted twice because, in this study, it is necessary to conduct an independent variable regression analysis of the mediating variable described in regression 1 and an independent regression analysis and mediation of the dependent variable described in regression 2. The results of the normality test using the Kolmogorov-Smirnov Test conclude that the regression model used is normally distributed with a significance value of greater than 0.05, as seen in [Table 5].

**Table 5. Normality Test using One-Sample Kolmogorov-Smirnov Test**  
**One-Sample Kolmogorov-Smirnov Test**

	Residual Value Regression 1	Residual Value Regression 2
<b>N</b>	111	111
<b>Asymp. Sig. (2-tailed)</b>	.103	.200

The next method is a multicollinearity test so that there are no difficulties in identifying if there are variables that have a high correlation. Researchers use tolerance and VIF values obtained through regression tests to analyse multicollinearity and compare them with the limit of multicollinearity values. The data limit is said not to occur. Multicollinearity is a tolerance value greater than 0.10 and a VIF value lower than 10 (Ghozali, 2021). So, it concludes that the regression model used in this study does not occur in multicollinearity according to statistical tests as shown in [Table 6].

**Table 6. Multicollinearity test**

<b>Model</b>	<b>Collinearity Statistics</b>		
		<b>Tolerance</b>	<b>VIF</b>
<b>Regression 1</b>	X1	,982	1,019
	X2	,982	1,019
<b>Regression 2</b>	X1	,919	1,088
	X2	,943	1,061
	Z	,911	1,097

**Source: Property of the author's**

The last is the heteroscedasticity test, which aims to find out if there is no uniformity in variance that is at risk of producing interpretation errors. This study used Spearman's rho analysis to produce residual values in heteroskedasticity testing. The residual value will conclude free from heteroskedasticity symptoms if it is more than greater than 0.050. Referring to [Table 7] of both regression models, none had symptoms of heteroskedasticity because all residual values exceeded 0.050 according to the attached SPSS test results.

**Table 7. Heteroscedasticity test using Spearman's rho.**

				<b>Residual Value</b>
<b>Regression 1</b>	Spearman's rho	X1	Sig. (2-tailed)	,316
		X2	Sig. (2-tailed)	,889
<b>Regression 2</b>	Spearman's rho	X1	Sig. (2-tailed)	,957
		X2	Sig. (2-tailed)	,842
		Z	Sig. (2-tailed)	,938

**Source: Property of the author's**

## Path Analysis

path analysis is necessary to determine how much influence the independent variable has on the dependent variable through the mediator variable. Path analysis tests hypotheses and provides an overview of the complexity of relationships between variables in a system (Baron & Kenny, 1986) In path analysis, arrows represent the relationship between variables, and the beta value is used to show the magnitude of the influence of one variable on other variables, so a path analysis scheme is made as below.

The attached path diagram below consists of two-equation structures for the first regression model (2) & for the second regression model (3). Where X1 is trustworthiness financial influencers, X2 is Financial Literacy, Z is perception risk, Y is herding behaviours,  $\beta$  is the beta coefficient, and e is the error value.

$$Z = \beta_1 \cdot X_1 + \beta_2 \cdot X_2 + e_1 \quad (2)$$

$$Y = \beta_4 \cdot X_1 + \beta_3 \cdot Z + \beta_5 \cdot X_2 + e_2 \quad (3)$$

Analysis using SPSS consists of two steps, first is the analysing for regression model 1 and the second is the regression 2. Regression analysis measures influences in aggregate and looks at effects partially. Equation 1 measures the effect of financial influencer credibility and financial literacy on risk perception. Equation 2 measures the effect of financial influencer credibility, financial literacy and risk perception on herding behaviours (Joseph et al., 2009; Rex, 2016).

## Sobel Test

The use of risk perception as a mediator variable requires researchers to use *the Sobel* test to test the significance of mediation by calculating using the formula below (4) where z is an indirect effect, a is a coefficient trustworthiness financial influencer/ financial literacy to perception risk, b is coefficient of perception risk to herding behaviour, and SE is standard error each coefficient. The Sobel Test is a statistical test used to test the indirect influence of mediator variables (Abu-Bader & Jones, 2021; Sobel, 1982). In calculating the Sobel test, researchers use interactive Sobel calculation software created (Preacher & Leonardelli, 2001).

$$z = \frac{ab}{\sqrt{(b^2 SE_a^2) + (a^2 SE_b^2)}} \quad (4)$$

## RESULTS

### Descriptive Statistics

Descriptive statistical analysis is needed to provide interpretation and describe data through mean values, minimum values, maximum values and standard deviations (Ghozali, 2021). The values generated from descriptive statistical tests are used to explain the data to make it easier to understand and provide a little insight into the research on the variables used. The results of the static test are attached to [Table 8].

**Table 8. Descriptive Statistic**

Descriptive Statistics						
	N	Minimum	Maximum	Median	Mean	Std. Deviation
X1	111	16	29	20.5	21.78	2.858
X2	111	24	49	36.5	33.81	5.511
Z	111	8	20	13	13.62	2.905
Y	111	10	23	16.5	15.73	2.908
Valid N (listwise)	111					

Source: Property of the author's



The attached [Table 8] shows 111 samples shown in column N, and all of them are valid. The average value is higher than the standard deviation, and concluded that all the data is varied and evenly distributed. No result stands out more than the other. Most respondents trust the influencer, understand financial literacy, have a good risk perception, and tend not to do herding behaviours.

**Regression 1**

**Table 9. Model Summary Regression Model 1**  
**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Regression Model 1	.732	.536	.528	0.81159

**Source: Property of the author's**

The first regression test is to evaluate regression between independent variables, namely trustworthiness of financial influencers (X1) and financial literacy (X2) with variables mediating risk perception (Z). Referring to [Table 9] of the model summary, R value is how much the independent variable in a regression affects the independent variable. In the first regression, it concluded that the influence of variables X1 and X2 on Z is 53 percent, so the remaining 47% influenced by other exogenous variables that not used by researcher in this study based on the adjusted R square.

**Table 10. Regression Model 1**  
**Coefficients**

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
X1	-.256	.027	-.620	-9.378	.000
X2	.103	.014	.482	7.289	.000

**Source: Property of the author's**

The results of regression conducted using SPSS seen on [Table 10] show how much influence the independent variable has on the dependent listed in the Beta standardized coefficients column. Where the trustworthiness of financial influencers (X1) negatively affects the risk perception of a millennial investor by -0.620, or every increase in the trustworthiness of financial influencers (X1) by 1% there is a change of -0.620 in the risk perception of millennial investors. Furthermore, Financial Literacy (X2) has a positive effect on the risk perception of a millennial investor by 0.482, or every increase in financial literacy (X2) by 1% there is a change of 0.482 in the risk perception of a millennial investor. From this regression evaluate it concluded that the influence of X1 and X2 on the variable Z is significant because the value of Sig. <0.50. So that the following equation stated on (5)

$$Z = -.620.X_1 + .482.X_2 + 0,681. \tag{5}$$

**Regression 2**

**Table 11. Regression Model 2**  
**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
-------	---	----------	-------------------	----------------------------

<b>Regression Model 1</b>	.825	.681	.672	1.19067
---------------------------	------	------	------	---------

Source: Property of the author's

The second regression test is to evaluate regression between the independent variable and the mediating variable, namely trustworthiness of financial influencers (X1), financial literacy (X2), and risk perception (Z) of the dependent variable, namely Herding Behaviours (Y). Referring to [Table 11] of the model summary, value is how much the independent variable in a regression affects the independent variable. In the first regression, it concluded that the influence of variables X1, X2, and Z on Y is 67%, so the remaining 33% is influenced by other exogenous variables that were not used by the researcher in this study based on the adjusted R square.

**Table 12. Regression Model 2 Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
X1	-.256	.027	-.620	-9.378	.000
X2	.103	.014	.482	7.289	.000

Source: Property of the author's

The next SPSS regression result [Table 4.5] show how much influence the independent and mediation variables have on the dependents listed in the Beta standardized coefficients column. Where the trustworthiness of financial influencers (X1) has a positive effect on the herding behaviours of a millennial investor by 0.579, or every increase in the trustworthiness of financial influencers (X1) by 1%, there is a change of 0.579 in the herding behaviours of millennial investors. Furthermore, there is Financial Literacy (X2) negatively affecting the herding behaviours of a millennial investor by -0.288, or every increase in financial literacy (X2) by 1% there is a change of -0.288 in the herding behaviours of a millennial investor. Finally, the risk perception (Z) of a millennial investor negatively affects the herding behaviours of millennial investors by -0.405, or every increase in risk perception (Z) by 1%, there is a change of -0.405 in the herding behaviours of millennial investors. From this regression evaluation, it concluded that the influence of X1 and X2 on the variable Z is significant because the value of Sig. <0.50. So the following equation stated on (6)

$$Y = .579.X_1 + -.288.Z + -.405.X_2 + 0,564. \tag{6}$$

**Sobel Test Result**

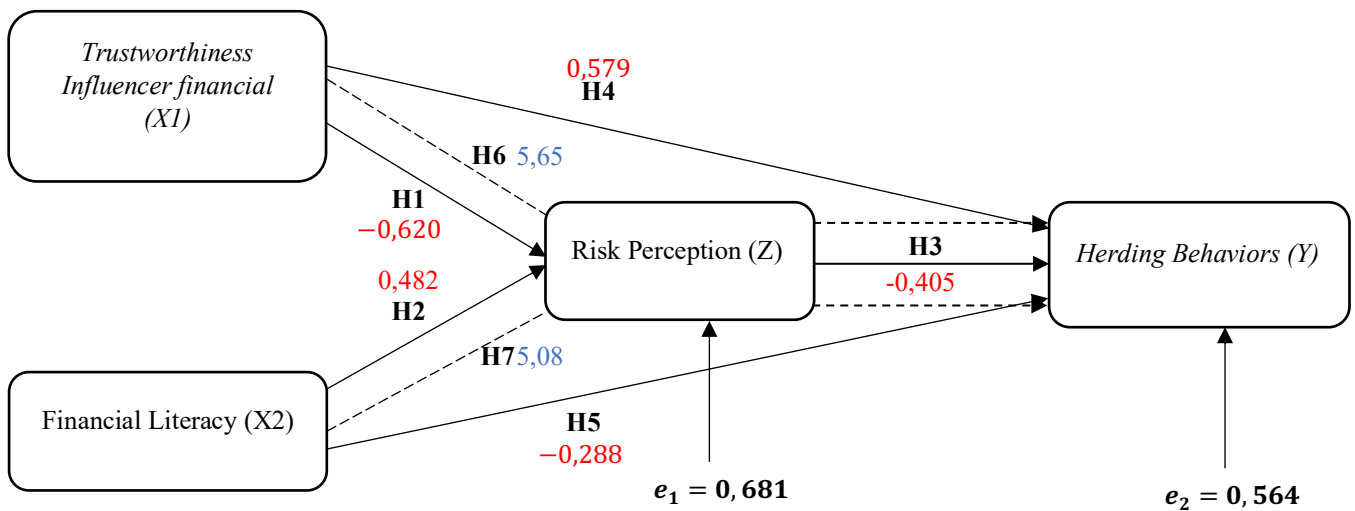
Table 13. Sobel Test X1 → Z → Y

Model	Value	Std. Error	p-value
X1 → Z → Y	5.656	0.013	0.00000002
X2 → Z → Y	-5.089	0.005	0.00000036

Source: Property of the author's

Furthermore, a Sobel test is needed to assess whether the mediation variable used can mediate the independent and dependent variables used. Sobel test results get a value of |5.8656| for X1 → Z → Y and |-5.089| for X2 → Z → Y, as seen in [Table 13]. The absolute value of the Sobel test must exceed 1.96 with a significance of less than 0.05 to prove the variable mediates the independent and dependent variables (Handayani & Rashid, 2016). With the fulfilment of the Sobel test benchmarks, risk perception significantly mediates the influence of financial influencer trustworthiness and financial literacy on the herding behaviours of millennial investors.

**Hypothesis Analysis**



**Figure 3. Diagram with Coefficient Attached**

Source: Property of the author's

Researchers include the coefficient value on the research diagram from all regression tests and the Sobel test to make it easier to understand, as attached to [Figure 3]. Based on the results obtained, the researcher has summarized the results of the hypotheses attached to [Table 14].

**Table 14. Hypothesis Test**

Hypothesis	Path	Regression Coefficient	Sig.	Sobel Test Statistic	p-Value	Result
H1	X1 → Z	-0,620	.000			Accepted
H2	X2 → Z	0,482	.000			Accepted
H3	Z → Y	-0,405	.000			Accepted
H4	X1 → Y	0,579	.000			Accepted
H5	X2 → Y	-0,288	.000			Accepted
H6	X1 → Z → Y			5,65	0,00	Accepted
H7	X2 → Z → Y			-5,08	0,00	Accepted

Source: Property of the author's

Each variable has a significant impact for direct effect based on its respective path, indicated by a significance value below 0.05. Move on to hypothesis one that financial influencer trustworthiness negatively influences risk perception, matches with previous research on the Trustworthiness of influencers is important in penetrating information because it can influence the perception and behaviours of their followers (AlFarraj et al., 2021) Specifically, the influence exerted by influencer trustworthiness will negatively affect according to how an influencer builds trust in his followers (Deshbhag & Mohan, 2020; Moraes et al., 2019). Hypothesis two financial literacy positively influences

risk perception. This study proves that there are indeed differences in the risk perception of people with different cognitive levels (Kanagasabai & Aggarwal, 2020). In line with previous research on risk management, it will be much better if financial literacy is high (Kumari, 2020) Hypothesis three risk perception influences herding behaviors negatively, This finding is contrary to research that states the human instinct that is afraid to take risks would do herding behaviours to avoid risks (Vedadi & Warkentin, 2020). However, the findings of this study support the research that states the opposite, namely that the more people want to avoid risk or have a high perception of risk, the less likely to engage in herding behaviors (Forlani & Mullins, 2000; Nur Aini & Lutfi, 2019).

Hypothesis four, the trustworthiness of financial influencers, positively influences herding behaviours in millennial investors. These findings provide results in line with previous research, where there is a significant positive influence between the trustworthiness of an influencer in influencing consumers to make decisions as suggested by influencers (Barnes et al., 2019; Miah et al., 2022) So it is slightly different from the research conducted by Hussain and Kim on the significance of the impact caused by influencer trustworthiness (Hussain et al., 2020; Kim & Kim, 2021). Hypothesis 5, financial literacy influences herding behaviours negatively in millennial investors in making investment decisions. These findings support the idea that an investor with a better level of literacy will trust personal decisions made (Kramer, 2016) A good level of investor financial literacy is proven to increase risk perception in financial decisions to avoid bias (Baker et al., 2019; Veronica et al., 2022) Hypothesis six and seven, the indirect effect from the mediating variable is significance based on the P value under 0,05 and the Sobel statistic value is above 1,96 prove that risk perception is mediating the independent variable. With the older research concluding risk perception as a mediating variable as the basis of human psychology, the information received will be a perception that will impact the actions taken (Michaels, 2000). A change in the level of perception of risk becomes lower, causing individuals to follow and trust information, which leads to herding behaviors (Bullock & Shulman, 2021). The findings in this research also show the impact of mediating significant risk perception between financial literacy and influence from others (influencers)(Ahmad & Shah, 2022). Investors with poor financial literacy have the potential to be influenced by influencers because of their ignorance, so they fall into herding behaviors (Baker et al., 2019; Veronica et al., 2022).

## CONCLUSION

This study unveils the intricate dynamics of herding behaviors among millennial investors, shedding light on the pivotal role played by the trustworthiness of financial influencers and financial literacy, with risk perception as a mediating factor. The research indicates that a higher level of influencer trust correlates with a diminished risk perception among millennial investors. At the same time, increased financial literacy intensifies their perception of risk in investment. Notably, these independent variables' impact on risk perception contrasts with their influence on herding behaviors. Given the study's reliance on a small sample size and a 10% margin of error, future researchers are encouraged to build upon these findings for a more comprehensive understanding of the millennial investor landscape. Suggestions for further research include expanding the sample size and incorporating additional independent variables such as gender, employment background, and salary. Recognizing the ease of capital market access and the abundance of information on the internet, enhancing financial literacy becomes paramount to mitigating the adverse effects of contemporary challenges. Improved literacy in the investment sector serves as a crucial defense against falling victim to herding behaviors and pump-and-dump practices, fostering a more rational consideration of risks among investors.

## REFERENCES

Ademola, S. A., Musa, A. S., & Innocent, I. O. (2019). Moderating Effect of Risk Perception on Financial Knowledge, Literacy and Investment Decision. *American International Journal of Economics and*

- Finance Research*, 1(1), 34–44. <https://doi.org/10.46545/aijefr.v1i1.60>
- Ahmad, M., & Shah, S. Z. A. (2022). Overconfidence heuristic-driven bias in investment decision-making and performance: mediating effects of risk perception and moderating effects of financial literacy. *Journal of Economic and Administrative Sciences*, 38(1), 60–90. <https://doi.org/10.1108/jeas-07-2020-0116>
- AlFarraj, O., Alalwan, A. A., Obeidat, Z. M., Baabdullah, A., Aldmour, R., & Al-Haddad, S. (2021). Examining the impact of influencers' credibility dimensions: attractiveness, trustworthiness and expertise on the purchase intention in the aesthetic dermatology industry. *Review of International Business and Strategy*, 31(3), 355–374. <https://doi.org/10.1108/RIBS-07-2020-0089>
- Baker, H. K., Kumar, S., Goyal, N., & Gaur, V. (2019). How financial literacy and demographic variables relate to behavioral biases. *Managerial Finance*, 45(1), 124–146. <https://doi.org/10.1108/MF-01-2018-0003>
- Barnes, K., Faasse, K., Geers, A. L., Helfer, S. G., Sharpe, L., Colloca, L., & Colagiuri, B. (2019). Can Positive Framing Reduce Nocebo Side Effects? Current Evidence and Recommendation for Future Research. *Frontiers in Pharmacology*, 10(March). <https://doi.org/10.3389/fphar.2019.00167>
- Baron, R. M., & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research. Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. <https://doi.org/10.1037/0022-3514.51.6.1173>
- Budiwati, N., Hilmiatussadiyah, K. G., Nuriansyah, F., & Nurhayati, D. (2020). Economic Literacy and Economic Decisions. *Jurnal Pendidikan Ilmu Sosial*, 29(1), 85–96. <https://doi.org/10.17509/jpis.v29i1.21627>
- Bullock, O. M., & Shulman, H. C. (2021). Utilizing Framing Theory to Design More Effective Health Messages about Tanning Behavior among College Women. *Communication Studies*, 72(3), 319–332. <https://doi.org/10.1080/10510974.2021.1899007>
- Cochran, W. G. (1963). Sampling Techniques, Third Edition, Page 75 read with 51. In *John Wiley and Sons, Inc.*
- Deshbhag, R. R., & Mohan, B. C. (2020). Study on influential role of celebrity credibility on consumer risk perceptions. *Journal of Indian Business Research*, 12(1), 79–92. <https://doi.org/10.1108/JIBR-09-2019-0264>
- Dirgantara, H. (2021, September 26). Investasi tak boleh hanya sekedar latah dan ikut-ikutan, simak cara yang benarle. *Investasi Kontan*. <https://investasi.kontan.co.id/news/investasi-tak-boleh-hanya-sekadar-latah-dan-ikut-ikutan-simak-cara-yang-benar>
- Dolet, U. D. (2019). *Metode Penelitian Kuantitatif* (S. Kasdin (ed.); 1st ed., Vol. 1). Universitas Katolik Indonesia Atma Jaya. [https://books.google.co.id/books?hl=en&lr=&id=DEugDwAAQBAJ&oi=fnd&pg=PR5&dq=macam+macam+metode+penelitian&ots=HkDemEx2pz&sig=jK46CbMQj\\_WSA4jFuxYAzPaa4KE&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.id/books?hl=en&lr=&id=DEugDwAAQBAJ&oi=fnd&pg=PR5&dq=macam+macam+metode+penelitian&ots=HkDemEx2pz&sig=jK46CbMQj_WSA4jFuxYAzPaa4KE&redir_esc=y#v=onepage&q&f=false)
- Forlani, D., & Mullins, J. W. (2000). Perceived risks and choices in entrepreneurs' new venture decisions. *Journal of Business Venturing*, 15(4), 305–322. [https://doi.org/10.1016/S0883-9026\(98\)00017-2](https://doi.org/10.1016/S0883-9026(98)00017-2)
- Ghozali, I. (2021). *Analisis multivariate lanjutan dengan program SPSS* (10th ed.). Universitas Diponegoro.
- Gross, J., & Wangenheim, F. von. (2018). The Big Four of Influencer Marketing. A Typology of Influencers. *Marketing Review St. Gallen*, 2, 30–38.
- Handayani, B., & Rashid, B. (2016). The Mediating Influence of Nation Brand Image in the Relationship between Tourism and Hospitality Attributes and Behavioural Intention. *Journal of Hospitality and Tourism*, 13(1), 1–14.
- Hayat, A. (2016). Impact of Behavioral Biases on Investment Decision; Moderating Role of Financial

- Literacy. *SSRN Electronic Journal*, 1–14. <https://doi.org/10.2139/ssrn.2842502>
- Hussain, S., Melewar, T. C., Priporas, C. V., Foroudi, P., & Dennis, C. (2020). Examining the effects of celebrity trust on advertising credibility, brand credibility and corporate credibility. *Journal of Business Research*, 109(April 2018), 472–488. <https://doi.org/10.1016/j.jbusres.2019.11.079>
- Jamal, S., Newbold, K. B., Scott, D. M., Jamal, S., Newbold, K. B., Scott, D. M., Jamal, S., Newbold, K. B., & Scott, D. M. (2023). Analysis of millennials and older adults' automobility behavior in Hamilton , Ontario behavior in Hamilton , Ontario. *Urban, Planning and Transport Research*, 11(1). <https://doi.org/10.1080/21650020.2023.2197979>
- Jones, J. L. (2021). Who are Millennials? And what they want from libraries, bookstores, and librarians. *IASL Annual Conference Proceedings*, 1. <https://doi.org/10.29173/iasl7976>
- Joseph, F. H., Barry, J. B., & C.Black, W. (2009). Multivariate Data Analysis. In *An introduction to path analysis* (7th ed.). Pearson.
- Kahneman, D., & Tversky, A. (2012). بررسی رابطه علی بین نرخ بهره و نرخ تورم: با استفاده از داده های تابلویی. 3, □□□□□□□□ □□□□□□□□ □□□□□□□□(September), 1–47.
- Kanagasabai, B., & Aggarwal, V. (2020). The Mediating Role of Risk Tolerance in the Relationship between Financial Literacy and Investment Performance. *Colombo Business Journal*, 11(1), 83. <https://doi.org/10.4038/cbj.v11i1.58>
- Kim, D. Y., & Kim, H. Y. (2021). Trust me, trust me not: A nuanced view of influencer marketing on social media. *Journal of Business Research*, 134(May), 223–232. <https://doi.org/10.1016/j.jbusres.2021.05.024>
- Kramer, M. M. (2016). Financial literacy, confidence and financial advice seeking. *Journal of Economic Behavior and Organization*, 131(March 2013), 198–217. <https://doi.org/10.1016/j.jebo.2016.08.016>
- KSEI. (2022). Statistik Pasar Modal Indonesia. *Publikasi PT Kustodian Sentral Efek Indonesia*, 1–6. [https://www.ksei.co.id/publications/demografi\\_investor](https://www.ksei.co.id/publications/demografi_investor)
- Kumar, P., Pillai, R., Kumar, N., & Tabash, M. I. (2022). The interplay of skills, digital financial literacy, capability, and autonomy in financial decision making and well-being. *Borsa Istanbul Review*. <https://doi.org/10.1016/j.bir.2022.09.012>
- Kumari, D. A. . (2020). The Impact of Financial Literacy on Investment Decisions: With Special Reference to Undergraduates in Western Province, Sri Lanka. *Asian Journal of Contemporary Education*, 4(2), 110–126. <https://doi.org/10.18488/journal.137.2020.42.110.126>
- Lebdaoui, H., Chetioui, Y., & Guechi, E. (2021). the Impact of Behavioral Biases on Investment Performance: Does Financial Literacy Matter? *International Journal of Economics and Financial Issues*, 11(3), 13–21. <https://doi.org/10.32479/ijefi.11318>
- Legendre, T. S., & Baker, M. A. (2021). The gateway bug to edible insect consumption: interactions between message framing, celebrity endorsement and online social support. *International Journal of Contemporary Hospitality Management*, 33(5), 1810–1829. <https://doi.org/10.1108/IJCHM-08-2020-0855>
- Leković, M. (2020). Cognitive Biases as an Integral Part of Behavioral Finance. *Economic Themes*, 58(1), 75–96. <https://doi.org/10.2478/ethemes-2020-0005>
- Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, 22(140), 55. <https://psycnet.apa.org/record/1933-01885-001>
- Madaan, G., & Singh, S. (2019). An analysis of behavioral biases in investment decision-making. *International Journal of Financial Research*, 10(4), 55–67. <https://doi.org/10.5430/ijfr.v10n4p55>
- Miah, M. R., Hossain, A., Shikder, R., Saha, T., & Neger, M. (2022). Evaluating the impact of social media on online shopping behavior during COVID-19 pandemic: A Bangladeshi consumers' perspectives. *Heliyon*, 8(9), e10600. <https://doi.org/10.1016/j.heliyon.2022.e10600>
- Michaels, C. F. (2000). Information, Perception, and Action: What Should Ecological Psychologists Learn

- from Milner and Goodale (1995)? *Ecological Psychology*, 12(3), 241–258. [https://doi.org/10.1207/S15326969ECO1203\\_4](https://doi.org/10.1207/S15326969ECO1203_4)
- Moraes, M., Gountas, J., Gountas, S., & Sharma, P. (2019). Celebrity influences on consumer decision making: new insights and research directions. *Journal of Marketing Management*, 35(13–14), 1159–1192. <https://doi.org/10.1080/0267257X.2019.1632373>
- Myers, S. (2021). Instagram Source Effects: The Impact of Familiarity and Likeability on Influencer Outcomes. *Journal of Marketing Development and Competitiveness*, 15(3), 50–55. <https://doi.org/10.33423/jmdc.v15i3.4540>
- Neumann, J. von, & Morgenstern, O. (1945). Theory of Games and Economic Behavior. *Philosophy of Science*, 12(3), 221–227. <https://doi.org/10.1086/286866>
- Nguyen, T. H., Shirai, K., & Velcin, J. (2015). Sentiment analysis on social media for stock movement prediction. *Expert Systems with Applications*, 42(24), 9603–9611. <https://doi.org/10.1016/j.eswa.2015.07.052>
- Nur Aini, N. S., & Lutfi, L. (2019). The influence of risk perception, risk tolerance, overconfidence, and loss aversion towards investment decision making. *Journal of Economics, Business & Accountancy Ventura*, 21(3), 401. <https://doi.org/10.14414/jebav.v21i3.1663>
- Pratama, I., Oktalitya, W., Kholis, N. S. E., & Yulianti, R. S. T. (2022). Role of Influencer Contents on Sharia Stock Market Activities in Indonesia During The Covid-19 Pandemic. *KnE Social Sciences*, 2022(2), 56–68. <https://doi.org/10.18502/kss.v7i10.11344>
- Preacher, K. J., & Leonardelli, G. J. (2001). *Calculation for the Sobel test: An interactive calculation tool for mediation tests*. <https://quantpsy.org/sobel/sobel.htm>
- Putra. (2021). Aksi Pompom Influencer Merajalela! Saham Mini Digoreng Garing. *CNBC Indonesia*. <https://www.cnbcindonesia.com/market/20210827023137-17-271605/aksi-pompom-influencer-merajalela-saham-mini-digoreng-garing>
- Rachi, T., & Sari, R. (2021). Pengaruh Ekspektasi Return, Persepsi Terhadap Resiko, Dan Self Efficacy Terhadap Minat Investasi Saham. *Jurnal Ilmu Ekonomi Dan Sosial*, 10(1), 6–18.
- 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), 053–059. <https://doi.org/10.13106/jafeb.2021.vol8.no1.053>
- Rex, B. K. (2016). *Principles and Practice of Structural Equation Modeling*. The Guilford Press.
- Sha, N., & Ismail, M. Y. (2021). Behavioral Investor Types and Financial Market Players in Oman. *Journal of Asian Finance, Economics and Business*, 8(1), 285–294. <https://doi.org/10.13106/jafeb.2021.vol8.no1.285>
- Shefrin, H. (2002). *Behavioral decision making, forecasting, game theory, and role-play*. 18, 375–382.
- Shefrin, H., & Statman, M. (1985). The Disposition to Sell Winners Too Early and Ride Losers Too Long: Theory and Evidence. *The Journal of Finance*, 40(3), 777–790. <https://doi.org/10.1111/j.1540-6261.1985.tb05002.x>
- Shen, N. (2014). Consumer rationality/irrationality and financial literacy in the credit card market: Implications from an integrative review. *Journal of Financial Services Marketing*, 19(1), 29–42. <https://doi.org/10.1057/fsm.2014.4>
- Skinner, J. (1987). Nber working paper series. *NBER Working Paper*, 20(August), 146–146. <http://www.nber.org/papers/w2983>
- Sugiyono. (2017). *Metode penelitian kuantitatif, kualitatif, dan R&D*. ALFABETA.
- Tchakounté, F., Amadou Calvin, K., Ari, A. A. A., & Fotsa Mbogne, D. J. (2022). A smart contract logic to reduce hoax propagation across social media. *Journal of King Saud University - Computer and Information Sciences*, 34(6), 3070–3078. <https://doi.org/10.1016/j.jksuci.2020.09.001>
- Uakarn, C. (2021). Sample size estimation using Yamane and Cochran and Krejcie and Morgan and Green formulas and Cohen statistical power analysis by G\*power and comparisons. *Apheit*

*International Journal*, 10(2), 76–88.

Vedadi, A., & Warkentin, M. (2020). Can secure behaviors be contagious? A two-stage investigation of the influence of herd behavior on security decisions. *Journal of the Association for Information Systems*, 21(2), 428–459. <https://doi.org/10.17705/1jais.00607>

Veronica, E., Bertha Silvia, S., & Deddy, M. (2022). *Proceedings of the 19th International Symposium on Management (INSYMA 2022)* (M. Werner Ria (ed.); Vol. 660). Atlantis Press. <https://doi.org/https://doi.org/10.2991/978-94-6463-008-4>

Viryajaya, D., & Handoyo, S. E. (2022). The Determinants of Irrational Investment Decisions Among Individual Investors in Indonesia Stock Exchange. *Proceedings of the Tenth International Conference on Entrepreneurship and Business Management 2021 (ICEBM 2021)*, 653(Icebm 2021), 219–225. <https://doi.org/10.2991/aebmr.k.220501.034>

---

**Copyright holder:**

Herdyawan Natahadi, Makaryanawati, Kamarul Baraini Keliwon (2023)

**First publication rights:**

International Journal of Social Service and Research (IJSSR)

**This article is licensed under:**