www.bircu-journal.com/index.php/birci
Budapest International Research and Critics Institute-Journal (BIRCI-Journal)
Humanities and Social Sciences
ISSN 2615-3076 Online)
ISSN 2615-1715 (Print)
Budapest Institute

The Effect of Heuristic Bias on Investment Decisions in The Indonesia Stock Exchange During the Covid-19 Pandemic

Muthia Siti Khoirunnisa[1], Sulaeman Rahman[2], Kurniawan Saefullah[3]
[1,2,3]*Master of Science Management, Universitas Padjajaran, Indonesia*
muthia20006@unpad.ac.id, sulaeman.rahman@unpad.ac.id, kurniawan.saefullah@unpad.ac.id

Abstract

This study aims to determine the effect of heuristic bias on investment decisions on the Indonesia Stock Exchange during the Covid-19 Pandemic. The third bias is the main bias in decision making under conditions of uncertainty. Behavioral finance research on heuristics is still very limited in developing countries, especially in Indonesia. The method used in this research is descriptive and verification. This study uses a quantitative approach with primary data sources. The population in this study is 8,103,795 people who are investors who already have shares in the IDX. The sampling technique used purposive sampling with a total sample of 240 respondents. Data collection techniques through questionnaires distributed online (google form). The data analysis technique used Structural Equation Modeling – Partial Least Square.

Keywords
heuristics; anchoring & adjustment; representativeness; availability; investment decision

I. Introduction

The crisis caused by the covid-19 pandemic that occurred from 2019 to 2022 now in fact does not make investors divert their investment funds to investment instruments that are lower risk, but data from KSEI states otherwise. The existence of the covid-19 pandemic that occurred in 2019 until the beginning of 2022 actually attracted investors to invest in shares on the Indonesia Stock Exchange. Researchers want to prove whether these investors make investment decisions rationally or vice versa).

Source: Yahoo.finance

***Figure 1**. Composite Stock Price Index for the period 2017-2022*

The JCI experienced a significant decline in 2020 from the 6,000 level to the 4000 level, at which time the Indonesian economy was unstable due to the Covid-19 pandemic.

DOI: *https://doi.org/10.33258/birci.v5i3.6319*

This is due to the news that spreads so that the market absorbs the news and causes the stock price on the exchange to decline. In addition, the panicked behavior of investors who absorb the news releases or sells their shares, causing the JCI to experience a sharp decline in 2020. An unstable market can lead to a crisis or recession. As during the 2008 crisis on the Indonesia Stock Exchange (IDX), which began with the financial crisis in the United States, this is a clear example of the vulnerability of investors' behavior in the capital market. So it can be said that the behavior of investors can affect stock prices.

According to Nanggolan (2010), the key to stock price movements is human behavior, in this case investors. Investor behavior is formed from the level of confidence or belief, and expectations or expectations. Investment decision or investment decision is a policy in making decisions made by investors, both individuals and groups about what to invest in one or more assets. Information obtained by investors can usually influence investment decisions, especially investors who have different understandings can lead to bias in investment decisions (Wulandari & Iramani, 2014). Development is a systematic and continuous effort made to realize something that is aspired. Development is a change towards improvement. Changes towards improvement require the mobilization of all human resources and reason to realize what is aspired. In addition, development is also very dependent on the availability of natural resource wealth. The availability of natural resources is one of the keys to economic growth in an area. (Shah, M. et al. 2020)

Previous research on the relationship between panic and activity in the stock market, revealed the role of sentiment and irrational thought processes in investment decisions (Aggarwal et al., 2021).

Khan, et al (2017) stated that some literature recognizes the role of heuristics in buying/selling decisions with the focus of the study being mostly in developed countries. The relationship between heuristics and stock purchase decisions has not been specifically established in developing countries. There are many differences in several aspects of the economy in developed countries with developing countries, including politics, law, technological developments, financial structures, income levels, as well as education.

The existence of a research gap from one author to another, thus making the author interested in researching further. The research gaps include the results of research from Khan, et al. (2017) where anchoring has a positive effect on investment decisions. This is different from the results of research by Budiman (2020) which states that anchoring does not affect investment decisions.

Other research on representativeness bias conducted by Toma, 2015), (Ikram, 2016), and (Irshad et al., 2016) where representativeness bias has a positive effect on investment decisions. However, research from (Shah et al., 2018) shows that representativeness bias has a negative effect on investment decisions.

The research of Shah et al. (2018) states that availability bias has a significant negative effect on investment decisions, while research by Ikram (2016) states that availability bias has a significant positive effect on investment decisions.

The objectives of this study are: (1) to determine the effect of anchoring & adjustment on investment decisions on the Indonesia Stock Exchange during the Covid-19 pandemic; (2) to determine the effect of representativeness on investment decisions on the Indonesia Stock Exchange during the Covid-19 pandemic; (3) to determine the effect of availability on investment decisions on the Indonesia Stock Exchange during the Covid-19 pandemic.

II. Research Method

The analysis in this research is using descriptive verification method. The population of this study is stock investors who already own shares on the Indonesia Stock Exchange, which are 8,103,795 people. The sampling technique used is purposive sampling. Determination of the minimum sample size for SEM according to Hair et al (2010) is: (Number of indicators + number of latent variables) x (5 to 10 times) Based on these guidelines, the maximum sample size for this study is: Maximum sample = (20 + 4) x 10 = 240 respondents. Data collection is done online through questionnaires distributed to respondents. This study uses the SEM (Structural Equation Modeling) method as the data analysis technique. The models in this study are as follows:

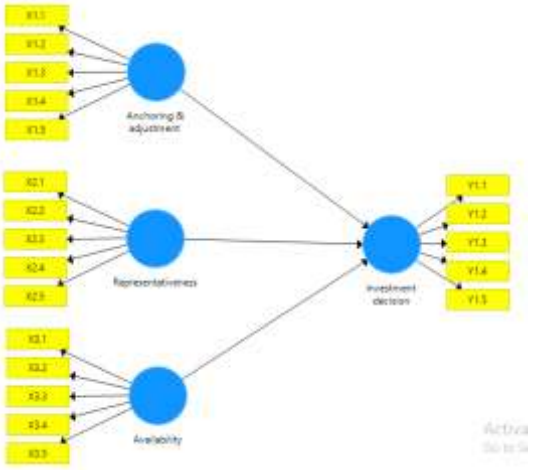


Figure 2*. Structural Research Model*

III. Result and Discussion

3.1 Analysis of the Measurement Model (Outer Model)

The following is the result of the outer model analysis:

a. Convergent Validity

*Convergent Validity*seen from the validity indicator (item reliability) and indicated by the loading factor. If the resulting loading factor value is more than 0.70 then it is declared valid. Pandapat Hair et al. (1998) stated that if the loading factor value is approximately 0.3, it can be considered that it has met the minimum requirements. For a loading factor value of approximately 0.40, it is declared better and a loading factor value greater than 0.50 is declared significant. The limit that the researcher chose for the loading factor value was 0.70.

Table1. Convergent Validity

Variable	**Indicator**	**Outer Loading**
*Anchoring & Adjustment*bias (X1)	X1.1	0.769
	X1.2	0.927
	X1.3	0.945

Representativeness bias(X2)	X2.1	0.942
	X2.2	0.939
	X2.3	0.911
Availability bias(X3)	X3.1	0.947
	X3.2	0.837
	X3.3	0.958
Investment Decision(Y)	Y1.1	0.945
	Y1.2	0.966
	Y1.3	0.969

Source: 2022 PLS Output

If seen in table 1 above, it can be concluded that the loading factor value for each question item shows a value greater than 0.70 and is declared valid.

b. Discriminant Validity

The discriminant validity test is carried out by the method*average variance extracted* (AVE) on each construct or latent variable. A model can be declared good if the AVE value in each construct is greater than 0.50. The AVE value for each construct can be shown in Table 2.

Table 2. ScoreAverage Variance Extracted (AVE)

Variable	AVE
Anchoring & Adjustment bias(X1)	0.781
Representativeness bias(X2)	0.867
Availability bias(X3)	0.838
Investment Decision(Y)	0.922

Source: 2022 PLS Output

c. Composite Reliability

In addition to testing with convergent validity and discriminant validity, outer model testing is done with composite reliability. A construct is declared reliable if the resulting composite reliability value is greater than 0.7. The results of testing the composite reliability value are shown in table 3.

Table 3. ScoreComposite Reliability

Variable	***Composite Reliability***
Anchoring & Adjustment bias(X1)	0.914
Representativeness bias(X2)	0.951

Availability bias(X3)	0.939
Investment Decision(Y)	0.973

Source: 2022 PLS Output

Based on table 3 above, it can be seen the value of*composite reliability*for each construct above 0.70. So it can be concluded that the construct has good reliability

d. Cronbach Alpha

The next test is to measure the value of*Cronbach Alpha*. A construct is declared reliable if the Cronbach's alpha value is greater than 0.60. The results of testing the composite reliability value are shown in table 4:

Table 4. ScoreCronbach Alpha

Variable	**Alpha Cronbach**
Anchoring & Adjustment bias(X1)	0.855
Representativeness bias(X2)	0.923
Availability bias(X3)	0.903
Investment Decision(Y)	0.958

Source: 2022 PLS Output

Based on table 3.6 above, Cronbach's alpha value for each construct is greater than 0.60, so it is declared reliable.

3.2 Descriptive Analysis of Research Variables Anchoring & Adjustment Variables

The results of the anchoring & adjustment descriptive analysis of 240 respondents in the study are presented in table 5.

Table 5.Variable Descriptive AnalysisAnchoring & Adjustment

No	**Indicator**	**Answer**					**Ideal Score**	**Actual Score**	**Percentage**
		STS	**TS**	**RG**	**S**	**SS**			
1	Have a target when buying and selling stocks	8	7	67	116	42	1200	897	74.8%
2	Believe in the analysis made by yourself	7	35	86	76	36	1200	819	68.3%
3	Stock analysis made unchanged despite being	16	38	118	51	17	1200	735	61.3%

	against well-known analysts								
4	Choosing stocks based on past performance	10	25	85	99	21	1200	816	68%
5	Don't care about the reputation of the company's shares purchased	7	24	74	112	23	1200	840	70%
Average							**1200**	**821.4**	**68.5%**

Source: primary data processed, 2022

Based on table 5, the average value for anchoring & adjustment variables is 821.4 from the ideal score of 1200 with a percentage of 68.5%. The indicator with the highest percentage is “Having a target when buying and selling stocks” at 74.8% while the lowest indicator is “Analysis of stocks made unchanged despite being against well-known analysts” at 61.3%.

a. Variable Representativeness

The results of the descriptive analysis of representativeness of 240 respondents in the study are presented in table 6.

Table 6. Variable Descriptive AnalysisRepresentativeness

No	statement	Answer					Ideal Score	Actual Score	Percentage
		STS	TS	RG	S	SS			
1	Believe that the shares of well-known companies will have a good performance	0	20	68	126	26	1200	878	73.2%
2	Believe that bluechip companies can be used as long-term investments	9	25	86	103	17	1200	814	67.8%
3	Believe that investing in companies listed on LQ45 is minimal risk	3	29	75	119	14	1200	832	69.3%

No	statement	Answer					Ideal Score	Actual Score	Percentage
4	Taking into account corporate social responsibility (CSR)	8	20	44	111	57	1200	909	75.8%
5	Avoid stocks that have performed poorly in the past	9	9	63	119	40	1200	892	74.3%
Average							**1200**	**865**	**72.1%**

Source: primary data processed, 2020

Based on table 6 above, the average value on the representativeness variable is 865 from the ideal score of 1200 with a percentage of 72.1%. The indicator with the highest percentage is "Considering corporate social responsibility (CSR)" at 75.8% while the lowest indicator is "Believing that bluechip companies can be used as long-term investments" at 67.8%.

b. Variable Availability

The following are the results of the descriptive analysis of representativeness of 240 respondents in the study:

Table 7. Variable Descriptive AnalysisAvailability

No	statement	Answer					Ideal Score	Actual Score	Percentage
		STS	TS	RG	S	SS			
1	Entrust or perform company analysis with reference to an application	10	14	53	117	46	1200	895	74.6%
2	Entrusting company analysis to well-known analysts	9	6	42	136	47	1200	926	77.2%
3	Rely on the latest profitable information -right	8	5	38	116	73	1200	961	80.1%
4	Buying stocks when the stock index is on the	6	9	34	114	77	1200	967	80.6%

No	statement	Answer					Ideal Score	Actual Score	Percentage
	rise								
5	Buying stocks when the stock index is on the rise	10	29	70	93	38	1200	840	70%
Average							**1200**	**917.8**	**76.5%**

Source: primary data processed, 2020

Based on table 7 above, the average value on the availability variable is 917.8 from the ideal score of 1200 with a percentage of 76.5%. The indicator with the highest percentage is "Entrusting company analysis to well-known analysts" at 80.6% while the lowest indicator is "Buying stocks when the stock index is on the rise" at 70%.

c. Investment Decision Variables

The following are the results of a descriptive analysis of investment decisions on 240 respondents in the study:

Table 8.Variable Descriptive AnalysisInvestment Decision

No	statement	Answer					Ideal Score	Actual Score	Percentage
		STS	TS	RG	S	SS			
1	Have sufficient knowledge about investing in the capital market	4	10	26	106	94	1200	996	83%
2	Knowing the expected rate of return	0	27	85	103	25	1200	846	70.5%
3	Can manage finances well	14	14	48	111	53	1200	895	74.6%
4	Make the right investment	6	7	11	105	111	1200	1028	85.7%

No	statement	Answer					Ideal Score	Actual Score	Percentage
5	Able to overcome financial problems faced	4	9	56	131	40	1200	914	76.2%
Average							**1200**	**935.8**	**78%**

Source: primary data processed, 2022

Based on table 8 above, the average value of the investment decision variable is 935.8 from the ideal score of 1200 with a percentage of 78%. The indicator with the highest percentage is "Making the right investment" at 85.7% while the lowest indicator is "Knowing the expected rate of return" at 70.5%.

3.3 Inner Model Test

a. Analysis of Variant (R2) or Determination Test

Analysis of Variant (R2) or Determination Test, namely to determine the influence of the independent variable on the dependent variable, the value of the coefficient of determination can be shown in Table 9:

Table 9. R-Square Nilai Value

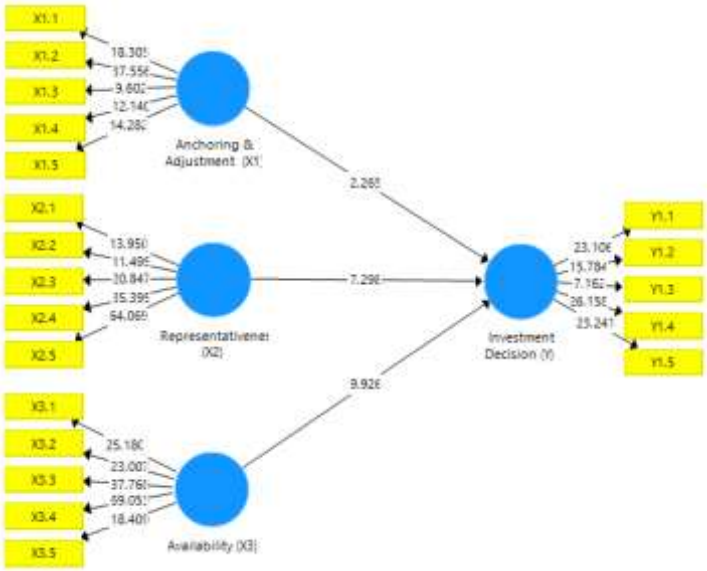
Variable	R-Square
Investment Decision	0.689

Source: PLS Output, 2022

Based on the r-square value in Table 9, it shows that anchoring & adjustment, representativeness and availability are able to explain the variability of investment decision constructs by 68.9%, and the remaining 31.1% is explained by other constructs outside those studied in this study.

b. Hypothesis test

Hypothesis testing is carried out based on the results of the Inner Model (structural model) test which includes r-square output, parameter coefficients and t-statistics. To see whether a hypothesis can be accepted or rejected, among others, by paying attention to the significance value between constructs, t-statistics, and p-values. The hypothesis testing of this research was carried out with the help of the SmartPLS (Partial Least Square) 3.0 software. These values can be seen from the bootstrapping results. The rules of thumb used in this study are t-statistic > 1.96 with a significance level of p-value 0.05 (5%) and a positive beta coefficient. The value of testing the hypothesis of this research can be shown in Table 10 and the results of this research model can be described as shown in Figure 3:



Source: PLS Output, 2022
Figure 3. *Inner Model*

Table 10. result path coefficients

Hipotesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statistics (|O/STDEV|)	P-Values
X1 → Y	-0,168	-0,165	0,074	2,265	0,024
X2 → Y	0,572	0,573	0,058	9,926	0,000
X3 → Y	0,446	0,443	0,061	7,298	0,000

Source: PLS output, 2022

The first hypothesis examines whether anchoring & adjustment has an effect on investment decisions on the Indonesia Stock Exchange during the Covid-19 pandemic. The test results show that the t-statistical value (2.265) > 1.96 with a significance of 0.024 <0.05, it can be concluded that anchoring & adjustment have an effect on investment decision.

The second hypothesis examines whether representativeness has an effect on investment decisions on the Indonesia Stock Exchange during the Covid-19 pandemic. The test results show that the t-statistic value (7.298) > 1.96 with a significance of 0.000 <0.05, it can be concluded that representativeness has an effect on investment decision.

The third hypothesis examines whether availability affects investment decisions on the Indonesia Stock Exchange during the Covid-19 pandemic. The test results show that the value of t-statistics (9.926) > 1.96 with a significance of 0.000 <0.05, it can be concluded that availability has an effect on investment decision.

3.4 Discussion

a. The effect of anchoring & adjustment on investment decisions on the Indonesia Stock Exchange during the Covid-19 pandemic

The results of hypothesis testing show the t-statistic value (2.265) > 1.96, these results indicate that anchoring & adjustment has a positive effect on investment decisions on the Indonesia Stock Exchange during the covid-19 pandemic. Anchoring & adjustment is a cognitive heuristic bias that occurs due to the tendency of individuals to rely too much on the initial part of the knowledge received (anchor) when making decisions. In decision-making, retention and modification occur because investors use initial information to make judgments. When the anchor has been set, all judgments and decisions refer to that anchor, of course this can lead to bias (Mahmood, et al 2017). Kahneman &

People who are affected by anchoring & adjustment bias tend to make decisions to either sell or buy stocks by making estimates based on past stock prices. This can lead to bias. Because stock prices move very volatile based on things that are currently happening not because of historical past. So that the stock price in the past does not reflect the stock price in the future. So it can be said that anchoring & adjustment have a positive effect on investment decisions.

The results of this study are supported by research conducted by Habib Hussain Khan, Iram Naz, Fiza Qureshi, Abdul Ghafoor (2017) which states that the three heuristics affect investors' stock purchase decisions. Jeetendra Dangol, Manandhar (2020) stated that there is a significant relationship between irrationality in investment decision making and the four heuristic biases.

b. Representativenesson investment decisions on the Indonesia Stock Exchange during the Covid-19 pandemic

The results of hypothesis testing show the t-statistic value (7.298) > 1.96, these results indicate that representativeness has a positive effect on investment decisions on the Indonesia Stock Exchange during the covid-19 pandemic. Representativeness is the tendency of people to perceive a characteristic as a representation of the whole phenomenon regardless of whether the characteristic is related to the phenomenon or not (Khan et al: 2017). This bias is often referred to as a stereotype bias. In the context of the stock market, people who are affected by the representativeness bias tend to buy company shares by looking at an index, for example LQ45 or IDX 30 because they feel that the index represents fundamentally good companies. Investors feel that buying shares of large companies and blue chips is the right decision and minimal risk, because large companies are considered not to go bankrupt so that stock prices are considered not to go down and cause losses. JCI data shows that the presence of COVID-19 has caused the stock price of the stock exchange to decrease for both companies listed on IDX30 and LQ45. In addition, the list of companies in the index often changes every year. So it can be said that representativeness has a positive effect on investment decisions. the list of companies in the index often changes every year. So it can be said that representativeness has a positive effect on investment decisions. the list of companies in the index often changes every year. So it can be said that representativeness has a positive effect on investment decisions.

The results of this study are supported by research conducted by Habib Hussain Khan, Iram Naz, Fiza Qureshi, Abdul Ghafoor (2017) which states that the three heuristics affect investors' stock purchase decisions. Jeetendra Dangol, Manandhar (2020) stated that there is a significant relationship between irrationality in investment decision making and the four heuristic biases.

c. Availabilityon investment decisions on the Indonesia Stock Exchange during the Covid-19 pandemic.

The results of hypothesis testing show the value of t-statistics (9.926) > 1.96, these results indicate that availability has a positive effect on investment decisions on the Indonesia Stock Exchange during the covid-19 pandemic. Availability is a condition where investors or individuals make decisions based on the ease with which information can be obtained and the knowledge of the investor without examining alternatives or other procedures. This can cause bias in decision making so that the decisions taken are irrational (Folkes: 1988). An investor who is prone to availability bias will rely more on events easier to remember and understand than difficult to understand. Investors who are affected by availability bias will make investment decisions, either buying or selling shares by only looking at RTI, which is an application that can assist investors in analyzing the market and stocks because it is felt that the information obtained is easier than analyzing themselves by looking for data at the source, namely financial reports on the internet. Indonesia stock exchange. So, availability bias causes investment decisions to be irrational. So it can be said that availability has a positive effect on investment decisions.

The results of this study support research conducted by Habib Hussain Khan, Iram Naz, Fiza Qureshi, Abdul Ghafoor (2017) which states that the three heuristics have an effect on investors' stock purchase decisions. Jeetendra Dangol, Manandhar (2020) stated that there is a significant relationship between irrationality in investment decision making and the four heuristic biases.

IV. Conclusion

Based on the results of research and discussion, it can be concluded that:

1. The results of hypothesis testing show the t-statistic value (2.265) > 1.96, these results indicate that anchoring & adjustment has a positive effect on investment decisions on the Indonesia Stock Exchange during the covid-19 pandemic.
2. The results of hypothesis testing show the t-statistic value (7.298) > 1.96, these results indicate that representativeness has a positive effect on investment decisions on the Indonesia Stock Exchange during the covid-19 pandemic.
3. The results of hypothesis testing show the value of t-statistics (9.926) > 1.96, these results indicate that availability has a positive effect on investment decisions on the Indonesia Stock Exchange during the covid-19 pandemic.

References

Agarwal, Anurag., Ajay Verma. (2021). Factors Influencing The Individual Investor Decision Making Behaviour in India. Journal of Applied Management and Investment vol.5 no.4

Budiman, Johny., Ervina, Ervina. (2021). Pendekatan perilaku Keuangan Terhadap Keputusan Investasi Emas. Jurnal Profit, Vol.14, No.1

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010). Multivariate Data Analysis. 7th Edition, Pearson, New York

Ikram, Zshid. (2016). An Empirical Investigation on Behavioral Determinantson, Impact on Investment Decision Making , Moderating Role of Locus of Control. Journal of Poverty, Investment and Development, 26, 44–50

Irshad, Shoaib., Badshah, Waqar., & Hakam, Usman. (2016). Management and Administrative Sciences Review Effect of Representativeness Bias on Investment

Decision Making. Management and Administrative Sciences Review, 5(1), 26–30
Jeetendra Dangol, Manandhar (2020). Impact of Heuristics on Investment Decisions: The Moderating Role of Locus of Control. Journal of Business and Social Sciences Research
Kahneman, Daniel. and Amos.Tveresky. (1974). Judgment under Uncertainty: Heuritics and Biases. Science, 185: 1124-1131
Khan, Habis.Hussain., Iram Naz., Fiza Qureshi., Abdul Ghafoor. (2017). Heuristics and stock buying decision: Evidence from Malaysian and Pakistani stock markets. Borsa Istanbu Review. 17-2, 97-110
Naingolan, R. (2009). Studi Perilaku Investor dan Pergerakan Harga Saham.
Shah, M. et al. (2020). The Development Impact of PT. Medco E & P Malaka on Economic Aspects in East Aceh Regency. Budapest International Research and Critics Institute-Journal (BIRCI-Journal). P. 276-286.
Toma, Filip-Mihai. (2015). Behavioral Biases of the Investment Decisions of Romanian Investors on the Bucharest Stock Exchange. Procedia Economics and Finance, 32(15), 200–207
Wulandari, Ayu Dewi., & Iramani, Rr. (2014). Studi Experienced Regret, Risk Tolerance, Overconfidance Dan Risk Perception Pada Pengambilan Keputusan Investasi. Journal of Business and Banking, 4(1)