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The Influence of Financial Behavior with Risk Perception as Moderation in Determining Investment Decisions in Batam City

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ABSTRACT

Stock investment is now an alternative for young people to invest in. In investing in stocks, there are still factors that can hinder investors, namely financial behavior. The purpose of this research is to know and understand the financial factors and the perception of investors' risk on investment decisions in Batam City. This study uses a quantitative approach with primary data in the form of a questionnaire and using purposive sampling. Financial literacy, overconfidence, herding, anchoring, representative, and availability have a significant positive effect on investment decisions. Meanwhile, risk perception and the other six moderating variables don't have any influence on investors' investment decisions. In investing, investors must understand financial behavior that helps investors in making good decisions and risk perception will make investors afraid of the risks that occur in investing.

Keywords: Investor, financial behavior, risk perception, investment decisions

1.Introduction

Investment is an activity that can generate profits from the instrument to be invested. One of the most well-known investment instruments is stocks. Stocks are an investment option that can be done. Stock investment is an investment in the long-term period. This stock investment can also be said to be an investment that provides returns or returns that are greater than other investment instruments. Reporting from Safitri (2021), stock investment is now an alternative investment for some young people.

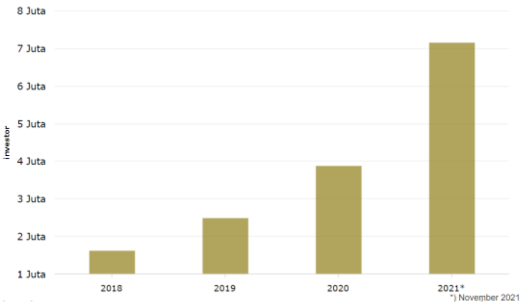

Figure 1 Total of Capital Market Investors
(Source: KSEI 2021)

Based on data released by the finance ministry from Kementerian Keuangan Republik Indonesia (2021), in the first semester of 2021, retail investors in the Indonesian capital market have a very high number of investors, which shows a significant increase of 96% from year to year. However, in November 2021 as reported by Annur (2021), the Indonesian Central Securities Depository (KSEI) recorded that the number of investors, particularly in the capital market, reached 7.15 million investors.

In investing in stocks, there are still several psychological factors for investors in making a stock investment. The Ministry of Finance explained that the level of public financial literacy, especially among investors in the capital market, was still very low, at only 5%. This shows that investors and the public who understand capital market products are still very minimal. Thus far, there are still many investors who do not know the psychology and irrational behavior of investors can influence decision-making (Ogunlusi & Obademi, 2019). According to Ritter (2003), behavioral finance uses a model where some investors are also not fully rational in making investment decisions. This is because there are still wrong investor preferences or beliefs. Behavioral finance assumes that investors are irrational in their "pick and choose" investment path. Investors will react according to new information. Under these conditions, this investor's decision may experience mispricing caused by arbitrage restrictions in financial markets (Antony & Joseph, 2017).

Behavioral finance which consists of overconfidence, herding, anchoring, representative, and

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availability is a study of the psychological influence on the behavior of financial practitioners and their subsequent effects on the market (Sewell, 2007). Alaaraj & Bakri (2020) state that financial literacy has an influence on investment decisions. Madaan & Singh (2019) stated that overconfidence has an influence on investment decisions. Ullah et al. (2020) states that herding has an influence on investment decisions. Barno et al. (2021) stated that anchoring has an influence on investment decision. Irshad et al. (2016) stated that representatives have an influence on investment decisions. Also, Salman et al. (2020) states that availability has an influence on investment decisions.

Risk perception also has an important role in investment decisions. Septi et al. (2019) state that the higher a person's level of risk perception, the lower the investor allocates funds to investment. In addition to examining the perception of risk in investment decisions, in this discussion, the researchers conducted some research on what if behavioral finance was moderated with the perception of risk. Because there are not many studies that explain the relationship of behavioral finance variables used by researchers on investment decisions that are moderated by this risk perception. According to Hutami (2018), risk perception is the interpretation of the situation from the perspective of an investor who considers the risk and return of the investment made. Analyzing the possible perceptions of risk that may occur can assist investors in considering the investment decisions to be taken. Therefore, in this discussion the researcher uses risk perception as a moderating variable in analyzing whether investors who have good psychological factors can be affected by perceptions of investment risk that may occur, especially for investors in Batam City.

Financial Literacy

Financial Literacy is a concept of a combination of behavior, knowledge, attitudes, and skills, along with the awareness needed by investors and the public in making good financial decisions for individuals and companies (Organisation for Economic Co-operation and Development, 2011). Alaaraj & Bakri (2020) state that financial literacy has a positive and significant influence on investment decisions. Individual and corporate investors must monitor the development and improvement of financial literacy. Waheed et al. (2020) stated that better financial literacy can help investors when making investment decisions. Meanwhile, investors with low financial literacy will have difficulty making better investment decisions. Financial skills, investment knowledge, and financial knowledge are the 3 main components that are most important in financial literacy in deciding decisions that will be made by investors (Kumari, 2020).
H1: Financial literacy has an influence on investment decisions.

Overconfidence

Overconfidence is a perception of ability that predicts excessive predictions and placements (Statman, 2019). Madaan & Singh (2019) stated that overconfidence has a positive and significant effect on investment decisions. This study shows that if the overconfidence of investors increases, the decision-making made by investors in investing will also increase. Overconfidence allows investors to assess and make decisions quickly in uncertainty (Quddoos et al., 2020).
H2: Overconfidence has an influence on investment decisions.

Herding

Herding is an action where investors prefer to follow the decisions of other investors. This is because every social being communicates regularly with each other and thinks the same (Hede, 2012). Ullah et al. (2020) state that herding has a positive and significant impact on investment decisions. This study proves that passive investors have a more significant relationship with herding. According to Madaan & Singh (2019), investors are irrational in their investment decisions and have limited choices. Herding is an important factor in creating investment decision-making for investors (Cao et al., 2021).
H3: Herding has an influence on investment decisions.

Anchoring

Anchoring is an investor action that only refers to the first known information or data even though sometimes the information or data is irrelevant (Stupavsky, 2018). Barno et al. (2021) stated that anchoring has a positive and significant effect on investment decisions. This study found that investors are very vulnerable to anchoring because they rely more on their past experience of investing, past prices (fair prices), and ignore new information.
H4: Anchoring has an influence on investment decisions.

Representative

Representative is a heuristic process in which investors have stereotyped thinking, where investors are more dependent on their past experiences (Teki & Arigela, 2018). Irshad et al. (2016) stated that representative has a positive and significant effect on investment decisions. The results of this study indicate that investors do not invest rationally but are influenced by representatives. Investors prefer to buy stocks based on the similarity of their characteristics with the expected performance (Rasheed et al., 2018).
H5: Representatives have influence on investment decisions.

Availability

Availability is the dependence of investors in thinking or estimating the possible outcomes that have been imagined (Pompian, 2006). Salman et al. (2020) state that availability has a positive and significant effect on investment decisions. This study finds that most of these investment decisions are influenced by the availability of individual investors. Khan et al. (2020) also stated the same thing.
H6: Availability has an influence on investment decisions.

Risk Perception

In the decision to invest, risk has a different assessment and perception from each investor which is influenced by psychological factors (Putri & Isbaniah, 2020). Loris & Jayanto (2021) stated that risk perception has a positive and significant effect on investment decisions. This study explains that prospect theory shows behavior in a situation where investors must face the uncertainty and risk. If there is a risk and investors keep taking it, then that is the type of investor who is willing to take risks. Siraji et al. (2021) stated that female investors are more risk averse than male investors.

H7: Risk perception has an influence on investment decisions.
H8: Risk perception has an influence on the relationship between financial literacy and investment decisions.
H9: Risk perception has an influence on the relationship between overconfidence and investment decisions.
H10: Risk perception has an influence on the relationship between herding and investment decisions.
H11: Risk perception has an influence on the relationship between anchoring and investment decisions.
H12: Risk perception has an influence on the relationship between representative and investment decisions.
H13: Risk perception has an influence on the relationship between availability and investment decisions.

Investment decisions

The investment decisions is a decision that determines the source and use of funds. The resulting investment decisions determine the size of the rate of return given in the investment (Agung et al., 2021). Meanwhile, according to Nurvianda et al. (2018), investment decisions is an decision on company assets to be managed in the future. This investment decisions is very important in achieving company goals, especially in the financial function by conducting investment activities (Achmad, 2014).

Based on the explanation, the following is the conceptual framework for this research:

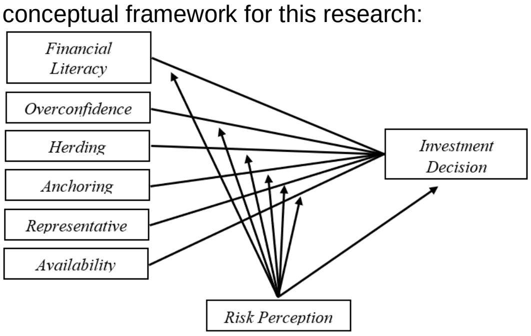

Figure 2 Conceptual Framework
(Source: Processed Data 2022)

2. Method

Population and Sample

In this study, the number of investors in the city of Batam is the population used in the object of this research. Based on data recorded on the Indonesia Stock Exchange (IDX) for the representative of the Riau Islands, the total population of Single Investor Identification (SID) is 30,191 people. The intended investors are individuals with minimum sampling criteria in research using krejcie morgan with a population size of 40,000, so the sample used in this study is 380 samples. Krejcie Morgan makes it very easy to take sample sizes by providing a sample size table in a certain population size (Sekaran & Bougie, 2016). The following is Krejcie Morgan's formula according to Sugiyono (2001):

$$n = \frac{X^2.N.P(1-P)}{(N-1).\ d^2 + \ X^2.P(1-P)}$$

Information:
n = sample size
X^2 = value of chi squared
N = population size
P = population proportion
d = guess error

Where it is assumed that X^2 = 3.841 ; P = 0.5 ; and d = 0.05

Data Collection Techniques

The data collection technique used by the researcher is by using purposive sampling. According to Priyono (2008), this purposive sampling technique is also known as judgmental sampling, which is a technique used to determine the criteria for the sample to be used. The criteria used are Batam City stock investors and those aged 17 years and over. This data was obtained by researchers by collecting results by questionnaires from Google Forms.

Data Analysis Method

After the data has been collected, the researchers analyzed the data using Partial Least Square (SmartPLS). Structural Equation Model (SEM) is a statistical method used in analyzing the relationships between variables based on the model used. PLS-SEM is the right method for researchers to develop theories and potential relationships between variables in developing hypotheses.

3. Results and Discussion

Descriptive statistics

Table 1 Respondent Age Data

Age	Frequency	Percentage
> 31	18	4,5
17-21	266	66,5
22-26	85	21,3
27-31	31	7,8
Total	**400**	**100,0**

Source: Processed Data 2022

Based on these respondents, it can be concluded that the average age of respondents is 17 years to 21 years as many as 266 respondents, which is about 66.5%, from 22 years to 26 years as many as 85 respondents (21.3%), which aged 27 to 31 years as many as 31 respondents (7.8%) and aged 31 years and over as many as 18 respondents (4.55%).

Table 2 Respondent Gender Data

Gender	Frequency	Percentage
Man	220	55,0
Woman	180	45,0
Total	**400**	**100,0**

Source: Processed Data 2022

Based on the table above, the sex of the respondents of investors is more dominant in men, which is 55% or as many as 220 respondents. While the female respondents were only 180 respondents with a percentage level of 45%.

Table 3 Respondent's Recent Education Data

Recent Education	Frequency	Percentage
D3	8	2,0
S1	171	42,8
S2	4	1,0
SMA/K	216	54,0
SMP	1	0,3
Total	**400**	**100,0**

Source: Processed Data 2022

The table above shows the respondent's data based on the last education level. As many as 54% of respondents or as many as 216 respondents are graduates from the senior high school (SMA or SMK level). Then as many as 42.8% or as many as 171 respondents are graduates from the bachelor's degree (S1 level). After that, there are also 2% of respondents or as many as 8 people with diploma (D3 level), about 1% of respondents or as many as 4 people with master's degree (S2 level), and there is 1 respondent or equivalent to 0.3% who is a graduate junior high school (SMP level).

Table 4 Respondent Status Data

Status	Frequency	Percentage
Single	361	90,3
Married	39	9,8
Total	**400**	**100,0**

Source: Processed Data 2022

This table shows the status of the respondents. From the results obtained, 90.3% of respondents are still single or unmarried with a total of 361 respondents. The remaining 39 respondents with a percentage rate of 9.8% have married status.

Table 5 Respondent's Job Data

Job	Frequency	Percentage
Freelancer	1	0,3
Housewife	4	1,0
Student	212	53,0
Civil Servants	1	0,3
Private employees	145	36,3
Entrepreneur	37	9,3
Total	**400**	**100,0**

Source: Processed Data 2022

Based on the table above, more respondents are currently running a college or can be said to be still a student, as many as 212 respondents with a percentage rate of 53%. Then some respondents work as private employees as many as 145 respondents (736.3%), entrepreneurs as many as 37 respondents (9.3%), housewife as many as 4 respondents (1%), civil servants as many as 1 respondent (0. 3%), and freelancers as much as 1 respondent (0.3%).

Table 6 Respondents' Monthly Income Data

Income	Frequency	Percentage
> 5.000.000	133	33,3
0 s/d 3.000.000	49	12,3
3.000.000 s/d 5.000.000	137	34,3
Unemployment	81	20,3
Total	**400**	**100,0**

Source: Processed Data 2022

The table above shows the respondents' monthly income data. There are 137 respondents who are already working and have an income of Rp. 3,000,000 to Rp. 5,000,000 with a percentage rate of 34.3%. A total of 133 respondents who are already working have incomes above Rp. 5,000,000 (33.3%), and as many as 49 respondents who are already working have incomes ranging from Rp. 0 to Rp. 3,000,000 (12.3%). In addition, there were also 81 respondents who did not work with a percentage rate of 20.3%.

Table 7 Respondent's Investment Time Data

Lama Investasi	Frequency	Percentage
1-5 Years	163	40,8
6-10 Years	7	1,8
Almost 1 Year	230	57,5
Total	**400**	**100,0**

Source: Processed Data 2022

Based on the data obtained from respondents, it was found that in this study as many as 230 respondents, or 57.5% used respondents who invested in stocks for almost 1 year. For those who invest for 1 year to 5 years, there are 163 respondents (40.8%). As for those who invest for 6 to 10 years, there are only 7 respondents (1.8%).

Validity test

Table 8 Outer Loading Test

Item	Value	Result
AC2	0,715	Valid
AC3	0,777	Valid
AC4	0,762	Valid
AC5	0,761	Valid
AV4	0,843	Valid
AV5	0,877	Valid
AC*RP	1,171	Valid
AV*RP	1,063	Valid
FL4	0,831	Valid
FL5	0,873	Valid
FL*RP	1,224	Valid
HD1	0,832	Valid
HD2	0,872	Valid
HD5	0,864	Valid
HD*RP	1,098	Valid
ID1	0,748	Valid
ID2	0,746	Valid
ID4	0,725	Valid
ID5	0,746	Valid
OC1	0,752	Valid
OC2	0,839	Valid
OC3	0,841	Valid
OC4	0,841	Valid
OC*RP	1,194	Valid
RP4	0,885	Valid
RP5	0,897	Valid
RS2	0,829	Valid
RS5	0,756	Valid
RS* RP	1,122	Valid

Source: Processed Data 2022

In table 8, the outer loading test for each indicator is acceptable and valid. This is because the indicator has exceeded the standard, which is more than 0.6. The highest result of the outer model test is 1.224. Then the lowest result obtained from this outer loading test is 0.715.

Table 9 Average Variance Extracted Test

Item	AVE
Anchoring	0,569
Availability	0,740
Financial Literacy	0,727
Herding	0,733
Investment decisions	0,550
MAC	1,000
MAV	1,000
MFL	1,000
MHD	1,000
MOC	1,000
MRS	1,000
Overconfidence	0,671
Representative	0,630
Risk Perception	0,794

Source: Processed Data 2022

Based on the test results on the AVE, it was found that the largest indicator was found in the moderating variable. While the lowest indicator was 0.550. Judging from the results obtained, it can be concluded that all variable indicators have met and exceeded the standard, which is greater than 0.5.

Then, in testing the cross loading, all indicators of this cross-loading can be used because they meet the criteria and exceed the standard, which is more than 0.7. For testing the Fornell-Larcker criteria, it is also declared valid because the indicator value has exceeded 0.7 according to the standard. In addition, testing of HTMT shows that this measurement can be accepted and used in this study because it shows a number below 0.9 which already meets the criteria for each variable.

Reliability Test

Table 10 Cronbach's Alpha Test

	Cronbach's Alpha	Composite Reliability
Availability	0,748	0,840
Availability	0,649	0,850
Financial Literacy	0,626	0,842
Herding	0,818	0,892
Investment decisions	0,727	0,830
MAC	1,000	1,000
MAV	1,000	1,000
MFL	1,000	1,000
MHD	1,000	1,000
MOC	1,000	1,000
MRS	1,000	1,000
Overconfidence	0,836	0,891
Representative	0,415	0,773
Risk Perception	0,740	0,885

Source: Processed Data 2022

The table above shows the test results of Cronbach's alpha. From the results obtained, there is 1 less reliable variable, namely the representative variable. Availability and financial literacy variables are still said to be reliable because they have a value of more than 0.6, so they are still acceptable. In the composite reliability test, the representative variables, availability, and financial literacy exceed the standard, so this variable is said to be reliable and can be used in hypothesis testing, although Cronbach's alpha test is said to be less reliable. While the other variables are quite reliable because they have exceeded the standard, which is 0.6. Therefore, it can be concluded that the test of reliability is said to be reliable and will continue at the hypothesis testing stage.

Hypothesis test

Table 11 Direct Effect Test

	Sample Mean (M)	P Values	Hypothesis
AC → ID	0,126	0,008	Accepted
AV→ ID	0,187	0,000	Accepted
FL → ID	0,176	0,000	Accepted
HD →ID	0,091	0,036	Accepted
OC → ID	0,325	0,000	Accepted
RS → ID	0,103	0,034	Accepted
RP → ID	0,069	0,220	Rejected

Source: Processed Data 2022

H1: Financial literacy has an influence on investment decisions

Based on the results of hypothesis testing, it was found that financial literacy has a significant influence on investment decisions with a t statistic value of 3.851 with a p value of 0.000. From these results, then H1 is accepted because it is in accordance with the criteria. The higher the financial literacy, the higher the investment decisions made. This is because the financial literacy of an investor will affect whether the investment decisions is good or not. Conversely, if someone has a low level of financial literacy, it will be difficult for investors to make a good decision. These results are supported by the research of Waheed et al. (2020), Safitri & Purnamasari, (2021), Alaaraj & Bakri (2020), and Kumari (2020).

H2: Overconfidence has an influence on investment decisions

Overconfidence has a significant effect on investment decisions with t-statistics values of 7.705 and p-values of 0.000. From these results, it can be concluded that H2 is accepted because it has exceeded the criteria. The higher the overconfidence that investors have, the more their investment decisions-making will increase. Ahmed et al. (2021) also show that overconfidence is an important factor in making better investment decisions. If investors are confident in the decisions taken, they will make better decisions even in a state of market uncertainty. On the other hand, if the investor is not confident with the decision to be taken, then the investor cannot take a wise decision in investing. This result is also supported by Quddoos *et al.* (2020), Madaan & Singh (2019), and Antony & Joseph (2017).

H3: Herding has an influence on investment decisions

Based on these tests, it was found that herding has a significant influence on investment decisions with the t statistic value of 2.098 and the p value of 0.036. From these results, it can be concluded that H3 is accepted in the test. Based on the results of data collection of respondents, the average investor is still a novice investor. Thus, these novice investors still follow and imitate the decisions made by more senior investors. Thus, in this study, herding has a more significant effect on novice investors. These results are supported by the research of Cao et al. (2021), Qasim et al. (2019), Ullah et al. (2020), and Madaan & Singh (2019).

H4: Anchoring has an influence on investment decisions

Anchoring has an influence on investment decisions with a t statistic value of 2.647 and a p value of 0.008. So, it can be said that H4 is accepted. Investors in Batam City are satisfied with their past decisions when investing, so it can be said that these investors rely more on their past experiences. With past practice, investors can make better decisions in the future by looking at the results of previous decisions. This anchoring also helps investors to decide using the information obtained about the picture of the range and what to expect under conditions of uncertainty. This result is also supported by the research of Ogunlusi & Obademi (2019), Barno *et al.* (2021) dan Kumara & Kawshala (2021).

H5: Representatives have influence on investment decisions

Based on these results, it is found that the representative has a significant influence on the investment decisions with a t statistic value of 2.128 with a p value of 0.034. From these results, H5 is accepted because it meets the test criteria. This test indicates that investors pay more attention to the performance of the company in reconsidering the investment to be made to avoid failures that may occur. However, not always a company that has performed poorly in the past indicates that the company is not good. So, in determining an investment decision, one must look at the current performance of the company and its predictions for the future. These results are supported by research by Rasheed et al. (2018), Ogunlusi & Obademi (2019), and Loris & Jayanto (2021).

H6: Availability has an influence on investment decisions

Availability has a significant influence on investment decisions with t-statistics value of 3.749 and a p-value of 0.000. From this value, it is concluded that H6 is accepted because it meets the criteria. Investors are judged to be more dependent on previously known information from the latest news about stocks or from their friends and family in making decisions to invest. The same thing was also stated by Dangol & Manandhar (2020), Khan *et al.* (2020), and Salman et al. (2020) that investors rely on the latest information and information available from the stock market without verifying the veracity of the information obtained.

H7: Risk perception has an influence on investment decisions

Table 11 shows that the value of t statistics risk perception is 1.228 and the p-value is 0.220. Judging from the value obtained, then H7 is rejected because it does not meet the criteria. Thus, it can be concluded that risk perception does not have a significant influence on investment decisions. If investors have decided to invest in stocks, investors must accept the risks that will occur in the future, whether it generates a profit or even a loss. The higher the risk perception, the lower the opportunity to allocate funds to higher assets or it can be said that the investment decisions for investors will be lower (Septi et al., 2019).

Table 12 Indirect Effect Test

	Sample Mean (M)	P-values	Hypothesis
MAC → ID	-0,026	0,458	Rejected
MAV → ID	-0,027	0,567	Rejected
MFL → ID	0,010	0,665	Rejected
MHD → ID	-0,023	0,653	Rejected
MOC → ID	-0,014	0,718	Rejected
MRS → ID	-0,023	0,559	Rejected

Source: Processed Data 2022

H8: Risk perception has an influence on the relationship between financial literacy and investment decisions

Financial literacy moderated by risk perception does not have a significant effect on investment decisions. The t statistic value obtained is 0.443 and the p-value is 0.665, so H8 is rejected. The results of risk perception moderation weaken the relationship between financial literacy and investment decisions. Based on the results of the analysis, respondents are still doubtful and afraid of the losses that will be received. Thus, many other considerations must be made in determining a decision. This is also stated by Mulyani et al., (2021) that novice investors need various considerations so as not to suffer losses from the results of bad decisions made and will have an impact on their financial condition. Thus, it can be concluded that this risk perception weakens the relationship between financial literacy and investment decisions because this situation can make it difficult for investors to make good decisions even though investors have quite high financial literacy.

H9: Risk perception has an influence on the relationship between overconfidence and investment decisions

The results showed that the moderating variable of risk perception did not have a significant effect between overconfidence and investment decisions. This indirect effect has a t statistic value of 0.362 with a p-value of 0.718. Therefore, H9 is rejected. The resulting moderating effect weakens the relationship between overconfidence and investment decisions. This is because the risk perception will make investors confused and hesitant to decide on a certainty. This results in an investor, not on his feet. Therefore, the presence or absence of risk perception does not influence investors if investors will make investment decisions. This study was supported by Fahim et al. (2019) and Marheni (2021).

H10: Risk perception has an influence on the relationship between herding and in-vestment decision

Just like financial literacy and overconfidence, herding also does not have a significant effect on investment decisions if moderated by risk perception. The value of t statistics is 0.449 and the value of p-values is 0.653. H10 was also rejected in the test. The resulting moderating effect weakens the relationship between herding and investment decisions. Beginner investors have the nature to follow the directions given by other investors. This is because they trust and believe in the choices of other investors that will lead them to the best decision. This is supported by the research of Rehan et al., (2021). Thus, it can be concluded that in determining the investment decisions, the high herd-ing behavior of an investor will weaken if it is associated with risk perception in investment.

H11: Risk perception has an influence on the relationship between anchoring and investment decisions

Risk perception does not have a significant influence between anchoring and investment decisions, or it can be said that risk perception fails in moderating anchoring with investment decisions. Thus, H11 is rejected with a t statistic value of 0.743 with a p-value of 0.458. The resulting moderating effect weakens the relationship between anchoring and investment decisions. Investors who already have an overview and past experience to make a good decision in the future will be afraid to invest because of the risky investment situation. This is because investors tend to see a risky investment situation and will experience a loss from poor decision making Rosyidah & Lestari (2013). Thus, this risk perception weakens the relationship between anchoring and investment decisions.

H12: Risk perception has an influence on the relationship between representative and investment decisions

The results showed that the risk perception moderation did not have a significant influence between the representative and the investment decisions. The t-statistics value obtained is 0.585 and the p-value is 0.559. From these results, it can be concluded that H12 is rejected. The resulting moderating effect weakens the relationship between representatives and investment decisions. According to Adiputra (2021), investors do not analyze information about stock prices, investors immediately decide that the shares are worth buying. The decision of investors who are unanimous by looking at the company's performance is enough to convince investors to invest and the high risk that will be accepted by investors does not make investors afraid to decide on investing (Pradikasari & Isbanah, 2018).

H13: Risk perception has an influence on the relationship between availability and investment decisions

The results showed that the moderating variable of risk perception did not have a significant effect between availability and investment decisions. This indirect effect has a t statistic value of 0.573 with a p-value of 0.559. Therefore, H13 is declared rejected. The resulting moderating effect weakens the relationship between availability and investment decisions. According to Novwedayaningayu & Saputri (2020), investors are too concerned with information or data from a small group of investors. They believe that the information received can be trusted because the information has an impact on the investment to be made and is representative of the entire population. In this case, people tend to dare to take risks in investing, especially in investing in stocks, because stocks are investments that have a high level of risk (Kurniawati *et al.*, 2022). Thus, it can be concluded that everyone has a different risk perception.

4. Conclusion, Implications, and Recommendation

Conclusion

The variables of financial literacy, overconfidence, herding, anchoring, representative, and availability show a positive and significant influence on investment decisions. This is because in making an investment decisions, an investor must have sufficient knowledge with various financial literacy and understanding of an investment. In addition, an investor must be confident and confident in the decisions to be taken. Not to forget, investors also have to look at the performance of the company to be invested. This can depend on performance developments as well as the latest news about the company. With previous investment experience, it will bring investors make better investment decisions in the future. So, investors already know what are the right actions and what will be done in the future to determine an investment decisions.

While the independent variable risk perception, does not have a significant relationship to the investment decisions. Thus, the results of moderating risk perception on financial literacy, overconfidence, herding, anchoring, representative, and availability that were tested also had results, namely, they did not have a significant relationship with investment decisions. This is because if an investor is too excessive in seeing the risks that will occur in the future, then the investor will not have the courage to invest. In investing, every investor must accept and already know that investing in stocks has a high enough risk. If the investor cannot accept this risk, then the investment cannot be decided.

Implications

The theoretical implications in this study indicate that behavioral finance is very important and can influence an investor in making decisions. This is due to the different attitudes and behavior of every human being in assessing and understanding an investment product. Kandpal & Mehrotra, (2018) states that to be a successful investor, an investor must follow one's psychology which is related to analyzing the different investment paths in the market and how to take the final decision in terms of choosing the best investment. Meanwhile, a person's risk perception will not have a significant effect on investors. If someone has decided to invest, then they must be able to accept the risks that may occur in the future. Because investment is an activity that has a high level of risk. This statement also state by Kurniawati et al. (2022). In addition, there are also managerial implications for academics, namely that this research is expected in the future to provide additional information or input for learning materials and can develop future materials. Then for investors, it is hoped that this research can be used as a guide for investors in determining future investment decisions. In addition, it can also be used as a source of information to investors regarding behavioral finance in investment decisions.

Reccomendation

Based on the results of this study, there are several recommendations can be given for further research. Recommendations that can be given are that academics can work together with IDX in Batam City by creating investment galleries at universities that can provide investment information easily on campus. Then, the number of respondents used by researchers can be added again and the research sample target can be aimed at investors who have experience in investing for at least 3 years, to produce more optimal research.

5. References

Achmad, S. L. (2014). Pengaruh Keputusan Investasi, Keputusan Pendanaan, Kebijakan Dividen, dan Kinerja Keuangan Terhadap Nilai Perusahaan. *Jurnal Ilmu & Riset Akuntansi*, *3*(9), 1–15.

Adiputra, I. G. (2021). The Influence of Overconfidence , Representative Bias , and Risk Tolerance in Investment Decision Making : Evidence on Stock Investors in Indonesia. *Journal of Hunan University (Natural Science)*, *48*(4), 195–205.

Agung, G., Hasnawati, S., & Huzaimah, R. A. F. (2021). *The Effect Of Investment Decision, Financing Decision, Dividend Policy On Firm Value (Study On Food And Beverage Industry Listed On The Indonesia Stock Exchange, 2016-2018)*. *17*(1), 1–12.

Ahmed, R., Riaz, S., Aqdas, R., & Hassan, S. I. U. (2021). The Relationship among Overconfidence, Economic Expectation, Social Factors and Investment Decision Making Behavior with the Mediating and Moderating Effects. *Journal of Contemporary Issues in Business and Government*, *27*(02), 1075–1088. https://doi.org/10.47750/cibg.2021.27.02.127

Alaaraj, H., & Bakri, A. (2020). The Effect of Financial Literacy on Investment Decision Making in Southern Lebanon. *International Business and Accounting Research Journal*, *4*(1), 37–43. https://doi.org/10.15294/ibarj.v4i1.118

Annur, C. M. (2021). KSEI: Jumlah Investor Pasar Modal Capai 7,15 Juta Per November 2021. *Katadata.Co.Id*. https://databoks.katadata.co.id/datapublish/2021/12/10/ksei-jumlah-investor-pasar-modal-capai-715-juta-per-november-2021

Antony, A., & Joseph, A. I. (2017). Influence of Behavioural Factors Affecting Investment Decision—An AHP Analysis. *Metamorphosis: A Journal of Management Research*, *16*(2), 107–114. https://doi.org/10.1177/0972622517738833

Barno, L. J., Cheboi, J., & Muganda, C. (2021). Moderating Effect of Financial Literacy on Relationship between Anchoring and Investment Decision among SMEs in Nairobi County. *East African Journal of Business and Economics*, *3*(1), 65–81. https://doi.org/10.37284/eajbe.3.1.305

Cao, M. M., Nguyen, N., & Tran, T. (2021). *Behavioral Factors on Individual Investors ' Decision Making and Investment Performance : A Survey from the Vietnam Stock Market*. *8*(3), 845–853. https://doi.org/10.13106/jafeb.2021.vol8.no3.0845

Dangol, J., & Manandhar, R. (2020). Impact of Heuristics on Investment Decisions : The Moderating Role of Locus of Control. *Journal of Business and Social Sciences Research*, *V*(1), 1–14.

Fahim, F., Ali, A., Khan, M. A., & Khan, R. A. (2019). Impact of Overconfidence on Investor ' s Investment Decision : Moderating Role of Risk Perception and Religiosity-A Survey of Pakistan Stock Exchange. *Journal of Independent Studies and Research*, *17*(2), 85–96. https://doi.org/10.31384/jisrmsse/2019.17.2.6

Hede, P. D. (2012). *Behavioural Finance*. Colorado:Ventus Publishing ApS.

Hutami, C. W. (2018). *Pengaruh Literasi Keuangan, Overconfidence, Dan Persepsi Risiko Terhadap Pengambilan Keputusan Investasi*. Sekolah Tinggi Ilmu Ekonomi PERBANAS.

Irshad, S., Badshah, W., & Hakam, U. (2016). Effect of Representativeness Bias on Investment Decision Making Effect of Representativeness Bias on Investment Decision Making. *Management and Administrative Sciences Review*, *5*(1), 26–30.

Kandpal, V., & Mehrotra, R. (2018). Role of Behavioral Finance in Investment Decision – A Study of Investment Behavior in India. *International Journal of Management Studies*, *5*(4(6)), 39–49. https://doi.org/10.18843/ijms/v5i4(6)/06

Kementerian Keuangan Republik Indonesia.

(2021). *Literasi Keuangan Penting Untuk Tingkatkan Kecakapan Berinvestasi*. https://www.kemenkeu.go.id/publikasi/berita/literasi-keuangan-penting-untuk-tingkatkan-kecakapan-berinvestasi/

Khan, I., Afeef, M., Jan, S., & Ihsan, A. (2020). The impact of heuristic biases on investors ' investment decision in Pakistan stock market : moderating role of long term orientation. *Qualitative Research in Financial Markets*, *13*(2), 252–274. https://doi.org/10.1108/QRFM-03-2020-0028

Kumara, R. R. M. K. S., & Kawshala, B. A. H. (2021). The Impact of Heuristic Biases on Investors' Investment Decision Making; Evidence from Colombo Stock Exchange. *Journal of Business and Technology*, *5*(0), 86–103. https://doi.org/10.4038/jbt.v5i0.55

Kumari, T. (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

Kurniawati, R., Suparlinah, I., & Farida, Y. N. (2022). The effect of investment understanding , risk perception , income , and investment experience on investment behavior on capital market investors in Klaten District. *Jurnal Ilmiah Akuntansi Dan Keuangan*, *4*(9), 3995–4004.

Loris, R. P., & Jayanto, P. Y. (2021). The Effect Of Representativeness, Availability, Anchoring, Risk Perception, And Herding On Investment Decisions Syariah Investors. *Jurnal Akuntansi*, *11*(1), 81–92.

Madaan, G., & Singh, S. (2019). *An Analysis of Behavioral Biases in Investment Decision-Making*. *10*(4), 55–67. https://doi.org/10.5430/ijfr.v10n4p55

Marheni, D. K. (2021). Faktor-Faktor yang Mempengaruhi Investment Decision pada Investasi Properti di Kota Batam. *Sketsa Bisnis*, *8*(1), 19–33.

Mulyani, E., Fitra, H., & Honesty, F. F. (2021). Investment Decisions: The Effect of Risk Perceptions and Risk Propensity for Beginner Investors in West Sumatra. *Advances in Economics, Business and Management Research*, *192*(Piceeba), 49–55. https://www.atlantis-press.com/article/125963968.pdf

Novwedayaningayu, H. C., & Saputri, C. K. (2020). Peran Bias Availability dan Bias Representativeness Dalam Keputusan Investasi. *Journal of March "Manajement Research,"* *2*(1), 25–31. http://jom.untidar.ac.id/index.php/market/article/view/1835

Nurvianda, G., Yuliani, & Ghasarma, R. (2018). Pengaruh Keputusan Investasi , Keputusan Pendanaan dan Kebijakan Dividen Terhadap Nilai Perusahaan. *Jurnal Manajemen Dan Bisnis Sriwijaya*, *16*(3), 164–177.

Ogunlusi, O. E., & Obademi, O. (2019). The Impact of Behavioural Finance on Investment Decision-making: A Study of Selected Investment Banks in Nigeria. *Global Business Review*, *22*(6), 1345–1361. https://doi.org/10.1177/0972150919851388

Organisation for Economic Co-operation and Development. (2011). *Measuring Financial Literacy : Questionnaire and Guidance Notes for Conducting an Internationally Comparable Survey of Financial Literacy*.

Pompian, M. M. (2006). *Behavioral Finance and Wealth Management*. Canada:John Wiley & Sons, Inc.

Pradikasari, E., & Isbanah, Y. (2018). Pengaruh Financial Literacy, Illusion of Control, Overconfidence, Risk Tolerance, dan Risk Perception Terhadap Keputusan Investasi Pada Mahasiswa di Kota Surabaya. *Jurnal Ilmu Manajemen (JIM)*, *6*(4), 424–434.

Priyono. (2008). *Metode Penelitian Kuantitatif*. Sidoarjo:Zifatama Publishing.

Putri, R. A., & Isbaniah, Y. (2020). Faktor-Faktor Yang Mempengarui Keputusan Investasi Pada Investor Saham Di Surabaya. *Jurnal Ilmu Manajemen*, *8*(1), 197–209.

Qasim, M., Hussain, R. Y., Mehboob, I., & Arshad, M. (2019). Impact of herding behavior and overconfidence bias on investors' decision-making in Pakistan. *Accounting*, *5*(2), 81–90. https://doi.org/10.5267/j.ac.2018.7.001

Quddoos, M. U., Rafique, A., Kalim, U., & Sheikh, M. R. (2020). Impact of Behavioral Biases on Investment Decision Making with Moderating Role of Financial Literacy. *Journal of Accounting and Finance in Emerging Economies*, *6*(2), 34–41. https://doi.org/10.53369/rkxa7855

Rasheed, M. H., Rafique, A., Zahid, T., & Akhtar, M. W. (2018). *Factors influencing investor's decision making in Pakistan: moderating the role of locus of control*. *10*(1), 70–87.

Rehan, M., Alvi, J., Javed, L., & Saleem, B. (2021). Impact of Behavioral Factors in Making Investment Decisions and Performance: Evidence from Pakistan Stock Exchange. *Market Forces*, *16*(1), 1–22. https://doi.org/10.51153/mf.v16i1.435

Ritter, J. R. (2003). Behavioral finance. *Pacific Basin Finance Journal*, *11*(4), 429–437. https://doi.org/10.1016/S0927-538X(03)00048-9

Rosyidah, S. M., & Lestari, W. (2013). Religiusitas Dan Persepsi Risiko Dalam Pengambilan Keputusan Investasi Pada Perspektif Gender. *Journal of Business and Banking*, *3*(2), 189–200. https://doi.org/10.14414/jbb.v3i2.236

Safitri, K. (2021). Tips Investasi Saham bagi Pemula. *Kompas.Com*. https://money.kompas.com/read/2021/10/04/120600526/tips-investasi-saham-bagi-pemula?page=all

Safitri, S. D., & Purnamasari, D. I. (2021). The Impact Of Financial Literacy, Financial Behavior, And Financial Motivation On Students' Investment Decision. *International Journal of Current Research*, *13*(11), 19498–19501. http://eprints.upnyk.ac.id/27154/%0Ahttp://eprints.upnyk.ac.id/27154/1/2021_IJCR.pdf

Salman, M., Khan, B., Khan, S. Z., & Khan, R. U. (2020). The impact of heuristic availability bias on investment decision - making : Moderated mediation model. *Business Strategy and Development*, *4*(3), 1–12. https://doi.org/10.1002/bsd2.148

Septi, N., Ainia, N., & Lutfi, L. (2019). *The influence of risk perception , risk tolerance , overconfidence , and loss aversion towards investment decision making*. *21*(3), 401–413.

Sewell, M. (2007). *Behavioural finance background* (Issue May).

Siraji, M., Nazar, M. C. A., & Ali, M. S. I. (2021). Irrational Behaviour and Stock Investment Decision . Does Gender Matter ? Evidence from Sri Lanka . *Journal of Management, Innovation and Technologies*, *11*(2), 2185–2204.

Statman, M. (2019). *Behavioral finance* (2nd ed.). CFA Institute Research Foundation.

Stupavsky, M. (2018). *Behavioral Finance Foundations For Investors*. Slovakia:CFA.

Teki, S., & Arigela, C. S. R. (2018). *Behavioral Finance*.

Ullah, S., Elahi, M. A., Ullah, A., Pinglu, C., & Subhani, B. H. (2020). Behavioral in Investment Decision Responsible Biases Environmental Making and Moderating Role of Investor' s Type. *Intelektinė Eko Omika Intelektinė Ekonomika Intellectual Economics*, *14*(2), 87–105. https://doi.org/10.13165/IE-20-14-2-06

Waheed, H., Ahmed, Z., Saleem, Q., Mohy, S., & Din, U. (2020). *The Mediating Role of Risk Perception in the Relationship between Financial Literacy and Investment Decision*. *14*(4), 112–131.