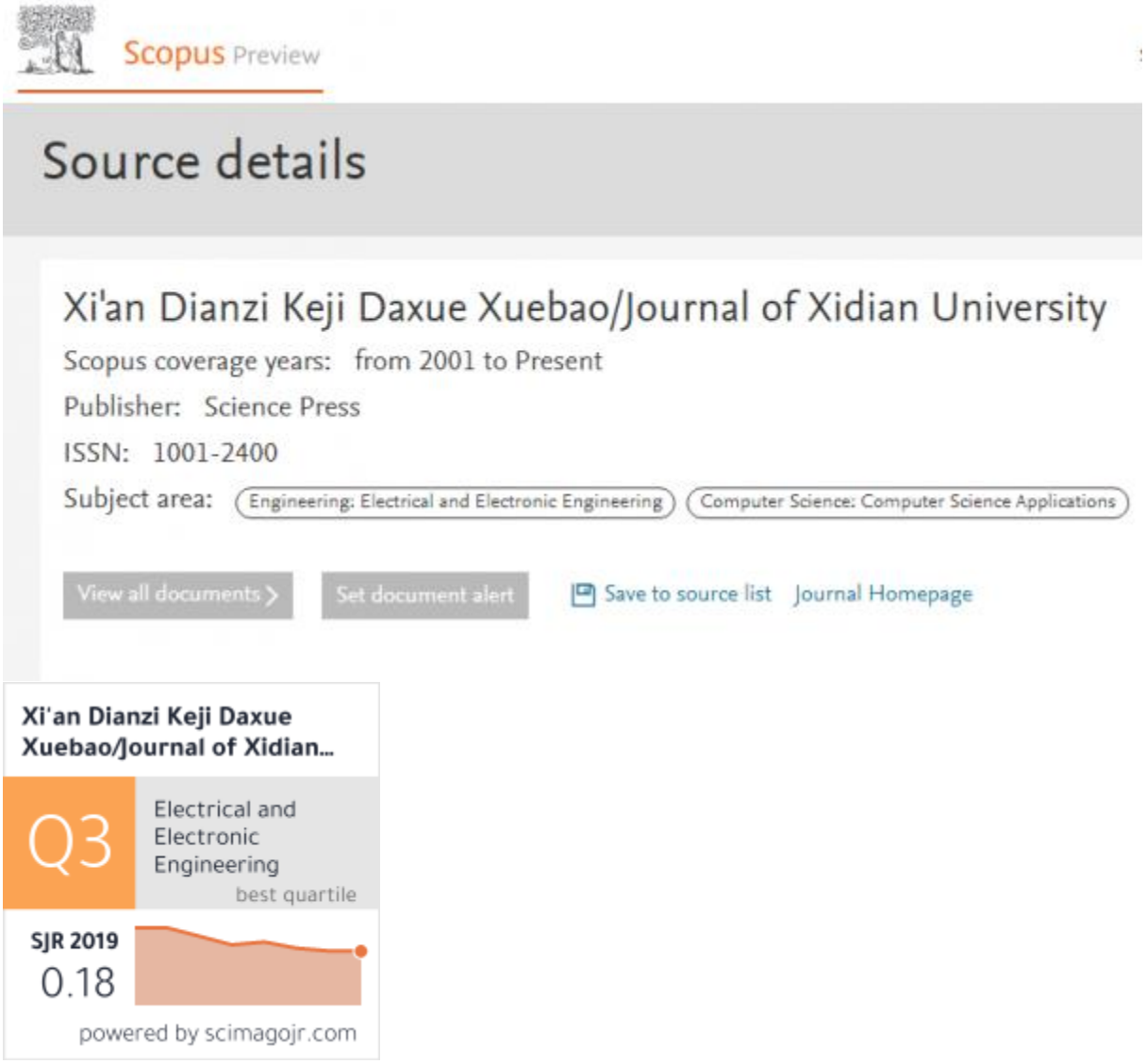
Journal of Xidian University
ISSN No: 1001-2400

Impact Factor : 5.4

Submit your paper to : editorjxu@gmail.com



Important Links

Journal Category : UGC CARE, SCOPUS
Subject Area : Multidisciplinary
UGC-CARE Group - II Journals Link :
https://ugccare.unipune.ac.in/site/website/areList.aspx
Login User Name: ugccaregroup2@gmail.com
Password: 123456789

Call For Papers

Journal of Xidian University is an open access scholastic and peer reviewed monthly international journal for encouraging Researchers, Practitioners, Academicians from Life Sciences, Engineering and Technology Management sectors to contribute to their inventive Research achievements and original work to make superiority information presented for a broader civic of readers and Internet users. Journal of Xidian University targets at promoting the integration of academic theories.

Journal of Xidian University is the leading open-access journal, providing a platform for publishing innovative and research articles. As an open access journal, articles in Journal of Xidian University will always be freely available online and readily accessible. This means that your work will be recognized and can be searched in Google Scholar.

Abstracted & Indexed in:

Scopus, Chemical Abstracts Services (CAS); J-Gate Plus; Research Bible; EBSCO Publishing's Electronic Databases, USA; DOAJ; Urlich's Periodical Directory, USA; Indian Science Abstracts, India; Index Copernicus, Poland; ISI, Thomson Reuters.

Journal of Xidian University is an open-access journal publishing full-length research papers and review articles covering subjects that fall under the wide spectrum of science Engineering & technology. The journal is dedicated towards dissemination of knowledge related to the advancement in scientific research. The prestigious interdisciplinary editorial board reflects the diversity of subjects covered in this journal. science Engineering & technology, the coverage includes environmental science, pure and applied mathematics, agricultural research and engineering, biology, biotechnology, bioinformatics, Healthcare sciences (including clinical medicine, preventive medicine & public health), physics, biophysics, computer science, chemistry and bioengineering, to name a few.

Peer Review Policy:

Manuscripts submitted to the Science, Technology and Development Journal are approved by the Editor-in-chief followed by formal peer review process conducted in collaboration with editorial board members and independent referees. The publisher encourages the authors and reviewers to use the electronic submission and peer-review system.

Peer Review Process:

Submissions to the Journal of Xidian University passes through a double-blind peer-review process. The criteria for publication in Journal of Xidian University are as follows:
The study presents the results of primary scholarly research.
Results reported have not been published elsewhere.
The research meets all applicable standards of ethics and research integrity.
Experiments, statistics, and other analyses are performed to a high technical standard and are
described in sufficient detail.
Conclusions are presented in an appropriate fashion and are supported by the data.
The article is presented in an intelligible fashion and is written in standard English.

Once the manuscripts have passed quality control, they are assigned to a member of the Editorial Board (or an expert who is not a member of the Board) for conducting the peer-review process and for making a decision to accept, invite revision of, or reject the article. Information for reviewers can be accessed here.

Download Paper Format **Download Copyright Form**
Download Registration Form

Volume 14, Issue 7, July-2020

INDIVIDUAL BEHAVIOR BIAS IN INVESTMENT DECISION-MAKING

Ni Made Dwi Ratnadi[1)*], Anak Agung Gde Putu Widanaputra[2)], Ni Luh Supadmi[3)], I Nyoman Wijana Asmara Putra[4)]

[1,2,3,4)] *Faculty of Economics and Business, Udayana University-Bali, Indonesia*

Abstract-**Cognitive aspects and emotional aspects strongly influence individual behavior in making decisions. These aspects often cause individuals to behave biased in decision-making. This research empirically tests cognitive biases (herding and anchoring) and emotional biases (overconfidence bias and disposition effects) in making stock investment decisions on the Indonesian capital market—data obtained by survey. Respondents are young investors who are trading in investment gallery of Udayana University-Bali, Indonesia. The questionnaire responds as many as 173—the Data analysis techniques with structural equation models and partial least square techniques. The analysis shows that anchoring and herding influence on stock investment decisions. However, the disposition and overconfidence bias does not affect investment decisions. This result implies that young investors are aware of their emotional bias in making stock investment decisions. Before making an investment decision must analyze the information. This research is expected to contribute to behavioral finance in emerging capital markets, especially studies related to individual behavior bias.**

Keywords: ***Behavioral bias, herding effect, anchoring, overconfidence, disposition effect***

I. INTRODUCTION

Stock investment in the capital market is one investment alternative that is easily accessible to the public. Making investment decisions is a difficult decision and is influenced by various factors. One of the main factors is psychological factors. Psychological factors and limitations of rationality cause investors often behave irrationally in decision making. Herbert A. Simon has developed a theory of rationality that touches more on the aspects of humanism, namely bounded rationality [7]. Simon argues that individual behavior alone cannot reach a high level of rationality. The number of alternatives is so much that the information needed to evaluate these alternatives is so significant that just approaching objective rationality is difficult to achieve. Financial behavior is a theory based on the science of psychology that seeks to understand how emotions and cognitive deviations affect investor behavior.

Psychological bias causes individual decisions in investing to be irrational decisions and encourages individuals to make decisions based on intuition and feelings. Financial behavior is not only about human actions, but also about understanding investors' reasoning patterns, including the emotional processes involved and the extent to which they influence the decision-making process. Many studies contradicting traditional financial theory with efficient market hypotheses, many research have showed behavioral biases in investors [19], [21]. The financial behavior approach substitutes the traditional rationality hypothesis and states that behavioral biases affect persons in investing. Shefrin states that financial behavior studies about how psychological factors affect financial markets and decision making [30]. Financial behavior theory gave rise to new phenomena and revealed that agents were not entirely rational to financial market responses [6].

Kahneman and Tversky develop behavioral biases as the building blocks of financial behavior [15]. Behavioral bias arises from the asymmetry concerning the way human type decisions relating gains and losses [34]. The same individual who resists risk for decisions involving profits becomes risk seekers for decisions that avoid losses [15]. Cognitive and emotional aspects influence investors in making decisions. Cognition is the process of understanding, processing, concluding information or facts. Emotions are reactions to people or events. Both cognitive and emotional aspects are easily biased. If investors are biased in making decisions, it can affect their investment performance. Excessive beliefs, herding, anchoring, cognitive dissonance, availability bias, independent ascription, mental accounting, framing effect, representative bias, are some of the biases seen as building blocks of financial behavior that considerably impact individual investor decision making [9], [10], [14], [20], [22], [27], [23], [31], [32], [33], [38]. Lin shows that many investors have strong investment biases, such as overconfidence and disposition effects [17]. Sadi et al. believe that one of the essential factors in the financial decisions of investors is a failure of perception [28].

II. LITERATURE REVIEW

Relatively many studies have tested behavioral biases in decision making, but they are still relatively few that combine cognitive biases and emotional biases in stock investment decisions. The current research aims to empirically test cognitive biases, namely herding and anchoring bias, and examine aspects of emotional bias, namely overconfidence and disposition effects on stock investment decisions. This research continues the research of Ratnadi et al. examines behavioral aspects in investment decisions [27]. Developing Madaan and Singh's research examines four behavioral biases in investment decision making using different data analysis techniques, and the respondents are novice investors in Indonesia [9]. Novice investors with limited funds are expected by the Indonesian government to be long-term investors and very strategic in supporting the strength of national retail investors. They invest since stock experts have widely recommended a young age because it will cause investors to have more time to invest so that their investment will be more developed.

Successful investment depends on determining psychological biases and financial knowledge that can reduce these biases [13]. Investment decisions made by an individual must contain bias, but investment knowledge and rules allow reducing

bias. Kahneman and Tversky state that individuals often make mistakes in analyzing situations, including probability and economic analysis [15]. The following will explain four types of biases studied.

A. Overconfidence bias and Decision-Making

Overreaction by investors is due to self-confidence around their ability to understand or process information [20]. Therefore, overconfidence is an error of judgment in which people misjudge skills, knowledge, understand information, or enlarge individual probabilities of specific outcomes that occur. Overconfidence is the tendency of individuals to overconfidence in the perfection of their decisions in conditions of uncertainty. Excessive overconfidence is related to confirmation heuristics because it is easier for individuals to find information by their expectations than information that is contrary to their expectations. Overconfidence is a psychological trait that substantially impacts individual investment decisions [14]. The result study Qosim et al. found that the overconfidence bias had significant bias and a positive impact on investment decision making [26]. The behavior of overconfidence of investors in the capital market can be useful because this can make the market more liquid with increasing trading volume [2]. Research hypotheses developed:
H1: Overconfidence bias effect on stock investment decision making.

B. Anchoring Bias and Decision-Making

Anchoring bias is one of the most researched cognitive biases [32]. Anchoring bias affects the investor's decision-making process. Anchoring is a cognitive bias that explains the tendency of ordinary people to be contingent immensely on the first information when making decisions [1], [32], [33]. Investors will likely hold their share purchases at the latest highs. Such behavioral responses show that the anchoring bias is related to less ideal investor decisions in their decision-making process. Anchoring is the individual's tendency to predict a value based on the value of past data or other available information and not make adjustments when making a final decision. Research hypotheses developed:
H2: anchoring bias effects on stock investment decisions-making

C. Disposition Effect and Decision-Making

The disposition effect is the behavior of investors who rush to realize the benefits of their investments and take too long to hold losses that may occur. Alternatively, in other words, investors are irrational, too risk-averse if faced with conditions that are making a profit and risk-taking when facing loss conditions. Shefrin & Statman identified the disposition to sell winners too early and ride losers too long: theory and evidence" as a follow up to Kahneman & Tversky's research [15]. Shefrin & Statman developed a positive theory about the realization of capital gains and losses in which investors tend to "sell winners too early and ride losers too long." Shefrin & Statman's research results encourage many other researchers to conduct research related to the disposition to sell "winners" and hold back "losers." [31]. Research hypotheses developed:
H3: Disposition effect on stock investment decisions-making

D. Herding Effect-Decision-Making

Herding effect is a phenomenon usually observed in financial markets. Herding effect is the general leaning of human nature to refer, observe, and copy others' behavior during changing financial market conditions [37]. With herding, investors do not act realistically in their investment selections. They favor to follow the beliefs and opinions of other investors to make their investment decisions. Therefore when investors lead, they tend to hold back their choices and follow others. During times of market pressure, such as market anomalies, price bubbles, rumors, and more potent herding effects [18]. Herding behavior can produce the same movement patterns across individuals who are aware of substantial welfare losses. Herding bias is higher in developing capital markets than the developed capital markets [35]. The herding consists of three components: signals about market conditions, herding behavior to anticipate markets, and herding currently depend on previous herding [36]. Research hypotheses developed:
H4: Herding effect on stock investment decision-making

III. RESEARCH METHODS

A. Research Objects and Samples

The object of research is stock investment decisions-making. The population is students of the Faculty of Economics and Business (FEB) of Udayana University, who invest shares in the capital market. The reason for choosing FEB students is because there is an investment gallery as a means for students to feel and invest in-stock instruments directly. Learn to analyze stocks that are chosen by investors. It can also follow the development of economic, business, security, and social trends that affect the dynamics of stock movements, investment climate, and at least "literate" investment among students or young people in general. The sample is determined by the nonprobability method with a convenience sampling technique. As a general rule, sample sizes a ratio of 10: 1 or 20-1 cases for each variable (Hair et al., 2006: 98-99). The total number of indicators in the study was 10, so the number of sample parameters used at 100-200 respondents. However, in this study, the number of questionnaires was randomly distributed to as many as 200 respondents. Questionnaires are distributed directly to students and through google form. The questionnaire responses that could be analyzed were 173 (86.5 percent).

B. Measurement Instruments

This study uses four behavioral biases in investment decision-making: overconfidence bias, anchoring bias, disposition effect, and herding bias. The instrument used is a modification of several researchers. Table 1 shows the measurement instruments. Each answer to the question is a score starting from very agree (5); agree (4); neutral (3); disagree (2); strongly disagree (1). a pre-test conducted to test the validity with the reliability of the questions.

TABLE 1
MEASUREMENT INSTRUMENTS

Variable	Indicator
Overconfidence bias (X1)	X1.1 Feelings are better than average (2 questions)
	X1.2 Aggressiveness in buying and selling shares (2 questions)
	X1.3 Level of risk-taking (2 questions)
Anchoring bias (X2)	X2.1 Assess investments based on irrelevant reference points (2 questions)
	X2.2 Decision making based on salient events in the past (3 questions)
Disposition effect (X3)	X3.1 Immediately sell profitable shares (2 questions)
	X3.2 Withholding a losing stock (3 questions)
Herding effect (X4)	X4.1 Make decisions based on a majority vote (2 questions)
	X4.2 Lack of decisions made individually (2 questions)
Stock Investment Decision-Marking (Y)	Y1 Expected benefits (3 questions)
	Y2 Investment risk (2 questions)

Source: data analyzed, 2020

C. Data Analysis Technique

The analytical tool used in this research is partial least square (PLS). PLS is a variant-based SEM that can predict models to develop theories, results obtained from data processing using PLS remain strong even though there are abnormal or missing data, can be used in small samples. Although Partial Least Square is used to confirm the theory, it can also be used to explain the presence or absence of relationships between latent variables. Partial Least Square can analyze as well as constructs formed by reflexive indicators and formative indicators.

D. Measurement Model

The measurement model or outer model checked the validity and reliability of the construct—convergent and discriminant validity to examining the validity of each indicator. Convergent validity is measured by looking at outer loadings and average variance extracted (AVE). If the value of outer loadings is less than 0.7, this indicator can be removed from the construct. The indicator can also be said to be valid if it has an AVE value of more than 0.5, which means the probability of the indicator converges and enters into a construct that is meant to be higher, namely 0.5 [12]. Discriminant validity test at the value of cross-loading. Good discriminant validity can be seen from the cross-loading value of the indicator on the latent variable in the model. A significant difference between the indicators of the latent variable and other variables in the construct will strengthen the assumption of discriminant validity. Model reliability will be measured by looking at Cronbach's Alpha and composite reliability.

E. Structural Model

Evaluation of structural models is carried out to predict causal relationships between variables or hypothesis testing. The structural model or inner model with PLS is evaluated by examining the percentage of variance explained by the R-square value of the latent independent variable. A t-test through the bootstrapping process for evaluated stability in the estimation

IV. RESULTS AND DISCUSSION

The respondents of this study were students who invested in the stock market. The number of respondents' answers that could be analyzed was 173. Table 2 presents a general description of respondents.

TABLE 2
GENERAL DESCRIPTION OF RESPONDENTS

Information	Amount	Percentage
Gender:		
1. Male	68	39 %
2. Women	105	61 %
Age		
1. --≤ 20 years	50	29 %
2. 20 years - 25 years	123	71 %
The duration of the investment		
1. ... <1 year	72	42 %
2. 1-2 years	86	49 %
3. two years	15	9 %
Investment Amount		
1……< Rp1.000.000	89	51 %
2. Rp.1.000.000 –Rp2.000.000	74	43 %
3. Rp2.000.000 < ….	10	6 %

Source: data analyzed, 2020

A. Test Instrument

Before being distributed, the validity and reliability test of each question is carried out. The pilot test was conducted on thirty investors. Pearson's correlation coefficient value, is positive, and significant more than 0.3 indicates that the indicator is valid. The validity test results in Table 2 show the Pearson's correlation coefficient above 0.3, so all questions are valid.

TABLE 2
VALIDITY TEST

Variable	Instrument	Pearson's Correlation Coefficient	Information
Overconfidence biasX1)	X1.1.1	0.877	"Valid
	X1.1.2	0.930	"Valid
	X1.2.1	0.836	"Valid
	X1.2.2	0.849	"Valid
	X1.3.1	0.915	"Valid
	X1.3.2	0.707	"Valid
Anchoring bias (X2)	X2.1.1	0.914	"Valid
	X2.1.2	0.873	"Valid
	X2.2.1	0.789	"Valid
	X2.2.2	0.893	"Valid
	X2.2.3	0.876	"Valid
Disposition Effect (X3)	X3.1.1	0.892	Valid
	X3.1.2	0.944	Valid
	X3.2.1	0.858	Valid
	X3.2.2	0.862	Valid
	X3.2.3	0.905	Valid
Herdings Effect (X4)	X4.1.1	0.883	Valid
	X4.1.2	0.891	Valid
	X4.2.1	0.802	Valid
	X4.2.1	0.878	Valid
Stock Investment Decision-Marking (Y)	Y1.1.1	0.828	Valid
	Y1.1.2	0.929	Valid
	Y1.1.3	0.904	Valid
	Y2.2.1	0.949	Valid
	Y2.2.2	0.894	Valid

Sumber: data dianalisis, 2020

Variables are said to be reliable if the value of Cronbach's alpha> 0.60. Table 3 presents the results of the reliability test. Based on the information in Table 3, the Cronbach's Alpha value for the variable overconfidence bias, anchoring bias, disposition effect, herding effect, and investment decisions are all above 0.6

TABEL 3
RELIABILITY TEST

No	Variable	Cronbach's Alpha coefficient	Information
1	Overconfidence bias (X1)	0.923	Reliable
2	Anchoring bias (X2)	0.911	Reliable
3	Disposition Effect (X3)	0.930	Reliable
4	Herdings Effect (X4)	0.879	Reliable
5	Stock Investment Decision-Marking (Y)	0.936	Reliable

Sumber: data dianalisis, 2020

B. Measurement Model Analysis

Almost all have good convergent validity because the value of the outer loadings owned is more than 0.6 (see Table 4). The loading factor value one overconfidence indicator is below 0.6. The discriminant validity test shows a significant difference in the value of loading on the indicator of the latent variable compared to other variables. In other words, all indicators have met the discriminant validity requirements. Also, the value of composite reliability on the variables in this model has an average value of more than 0.7. With the fulfillment of these provisions, the instrument in this study is reliable. It can indicate the existence of significant accuracy, consistency, and precision in the instrument in measuring variables.

TABLE 4
VALIDITY DAN RELIABILITY

Indicator	X1	X2	X3	X4	Y
X1.2	0.737				
X1.3	0.684				
X2.1		0.703			
X2.2		0.813			
X3.1			0.938		
X3.2			0.700		
X4.1				0.822	
X4.2				0.722	
Y.1					0.808
Y.2					0.762
Composite Reliability	0.721	0.731	0.810	0.748	0.762
Average Variance Extracted (AVE)	0.506	0.578	0.685	0.599	0.616

Source: Data Analyzed, 2020

C. Structural Model Analysis

Analysis of the relationship between variables in the model to examine the influence of overconfidence bias, anchoring effect, disposition effect, herding effect on investment decisions. Figure 2 presents the model of the results of the analysis. Table 5 presented the relation between variables.

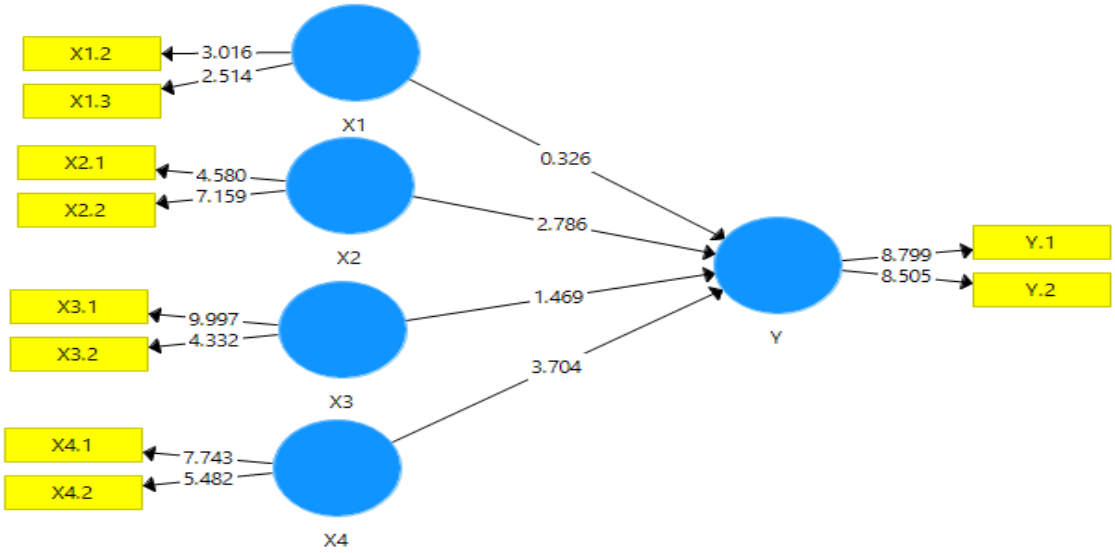


Figure 1: Variable Relationship Model

TABLE 5
PLS TEST RESULTS

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P -Values
Overconfidence bias➔ Stock Investment Decision-Making	0.028	0.038	0.086	0.326	0.744
Anchoring Bias➔ Stock Investment Decision-Making	0.232	0.237	0.083	2.786	0.006*)
Disposition Effect ➔ Stock Investment Decision-Making	0.118	0.122	0.081	1.469	0.142
Herding Effect➔ Stock Investment Decision-Making	0.334	0.345	0.090	3.704	0.000*)

Source: Data analyzed, 2020 *) = significant at the 0.05 level

D. The Effect of Overconfidence Bias on Stock Investment Decision-Making

From the results of data processing with PLS, overconfidence bias did not significantly influence stock investment decisions (P-Value 0.774> 0.05) then hypothesis 1 (H_1) is rejected. The analysis results indicate that novice stock investors do not feel better than average, are not aggressive in buying or selling shares, and avoid the risks taken. Possibly due to the relatively small investment value of beginners, they avoid the risk of loss. According to Darrat et al., Ohan et al., overconfidence behavior causes investors to invest large amounts [8]. The respondents of this study are students; they are likely to invest a relatively small amount in avoiding the risk of loss. Demographic factors and attitudes can influence investment decisions in the stock market, not just cognitive factors [4]. Most respondents are 20-25 years old, so they do not have enough investment experience, causing them to lack confidence.

E. The Effect of Anchoring Bias on Stock Investment Decision-Making

Anchoring bias affects the stock investment decision (P-Value = 0.006 <0.05) then hypothesis 2 (H_2) is accepted. The anchor is something that, if it happens, will trigger a certain feeling or emotion. Successful investors do not base their decisions on just one or two benchmarks; they evaluate each company from various perspectives to get a true picture of the investment land. The results of the analysis show students making investment decisions based on notable events in the past and assessing investments based on irrelevant reference points. The tendency of anchors can burden investors using the mentality of anchoring to buy or sell shares. After form the anchor, investors tend to give little value to new information. The anchoring bias is the tendency of investors to use the first information in making investment decisions [32], [33].

F. The Effect of Disposition on Stock Investment Decision-Making

The analysis showed that the disposition effect did not significantly affect stock investment decisions (P-value = 0, 142> 0.05) then hypothesis 3 (H_3) is rejected.This result is due to the respondents are novice investors who have just invested 1-2 years. The disposition effect is the tendency of stockholders to catchphrase from losses in the expectation of realized profits [24]. The disposition effect is the difference between a small portion of realized profits and a portion of realized losses [22]. Researchers have documented that the propensity of investors to grip stocks that sufferers in the long run and immediately sell profitable investments is called the disposition effect. The disposition effect has a detrimental result on an individual investment because investment loss usually performs while winning investments usually proceed to better performance [5]. Researchers have predictable that the disposition effect is an emotional bias. Event disposition effects also occur in mutual fund investors in Taiwan [16].

G. The Effect of Herding on Stock Investment Decision-Making

The herding effect influences investment decisions-making (P-Value = 0.00 <0.05) then hypothesis 4 (H_4) is accepted. Respondents in buying or selling their shares follow the majority's decision and make less individual decisions. Herding is a common phenomenon in the capital market. Herding causes investors to behave irrationally [18], [25], [37]. Herding can occur because investors want to follow the trend. There is a tendency for the decisions of others to be better than individual decisions. Arouri et al. analyzed the institutional herding behavior of investors in France [3]. His research results indicate that herding in small companies is usually done compared to large and medium-sized companies. In line with this study, the respondents were young investors with relatively small investments, between 1 million and 2 million, then investing. So in order to protect from the loss, the novice investors imitate the sophisticated investors. The investors behave biased herding because to protect investments from losses and to get the maximum profit. The results supported Qosim et al. show that Pakistani investors' decisions were significantly influenced by herding behavior [26].

VI. CONCLUSION

This study aims to examine cognitive bias and emotional bias in stock investment decisions. The analysis results show that the emotional bias of anchoring and herding effects impact stock investment decisions-making. Cognitive bias, namely overconfidence and dispositional effects, did not affect significantly on stock investment decisions-making. This study's results imply that emotional bias is higher than cognitive bias affecting young/novice investors in making stock investment decisions. This result means that they have not yet thoroughly analyzed the information obtained in their stock investment decisions. They follow established investor strategies to avoid losing their investments. This research is still limited to only testing four types of cognitive bias and emotional bias. There are still many types of cognitive biases and emotional biases that need to be empirically proven, such as heuristic bias, hindsight bias, and confirmation bias. To develop this research, the next researcher is expected to examine the effect of behavioral bias on investment performance.

ACKNOWLEDGEMENT

The authors would like to thank the Department of Accounting, Economic and Business Faculty of Udayana University–Bali Indonesia which has funded this research.

REFERENCES

[1] M. Ahmad, S. Z. A. Shah, and F. Mahmood, "Heuristic biases in investment decision-making and perceived market efficiency: a survey at the Pakistan Stock Exchange". *Qualitative Research in Financial Markets*, vol. 10(1), pp 85–110, 2018.

[2] Z. Arifin and E. Soleha,"Overconfidence, Attitude toward Risk, and Financial Literacy: A Case in Indonesia Stock Exchange". *Review of Integrative Business and Economics Research*, vol. 8, Supplementary Issue 4. 144-152, 2019.

[3] M.E.H. Arouri, R. Bellando, S. Renguede, and A. G. Vaubourg. 2010. "Herding by institutional investors: empirical evidence from French mutual funds". Available at https://www.researchgate.net/publication/45435706/

[4] A. K. Sakar and T. N. Sahu. "Analysis of Investment Behaviour of Individual Investors of Stock Market: A Study in Selected Districts of West Bengal". *Pacific Business Review International*, vol. 10 (7), 2019.

[5] J. Aspara and A. O. I. Hoffmann, "Selling losers and keeping winners: How (savings) goal dynamics predict a reversal of the disposition effect". *Marketing Letters*, vol. *26*(2), pp. 201-211, 2015

[6] N. Barberis. "A Survey of Behavioral Finance". *Journal Bureau of Economic Research*. 2002.

[7] H. Bazerman Max. *Judgment in Managerial Decision Making*. John Wiley & Sons.INC. 1994.

[8] A. F. Darrat, M. Zhong, and L. T. W. Cheng. "Intraday volume and volatility relations with and without public news". *Journal of Banking and Finance*, vol. *31*(9), pp. 2711-2729, 2007.

[9] G. Madaan and S. Singh. An Analysis of Behavioral Biases in Investment Decision-Making. *International Journal of Financial Research*, Vol 10(4). pp 55-67, 2019

[10] M. Glaser and M. Weber, "Overconfidence", *Behavioral Finance: Investors, Corporations, and Markets*, pp. 241-258, 2010.

[11] J.F Hair, W.C.Black, B.J. Babin, R.E. Anderson, and R.L. Tatham. *Multivariate Data Analysis*. 6ed. New Jersey. Prentice-Hall. 2006.

[12] J. Hartono and W. Abdillah. *Konsep dan Aplikasi PLS (Partial Least Square) Untuk Penelitian Empiris (Concept and Application of PLS (Partial Least Square) for Empirical Research)*. Ed. I, BPFE, Yogyakarta. 2009

[13] D. Jureviciene and K. Jermakova. The Impact of Individuals' Financial Behaviour on Investment Decisions. Paper presented at the anual meeting for the Society of 1st. Electronic International Interdisciplinary Conference, Slovakia, 2012, September 3-7.

[14] B. A. K. Joo, "Influence of Overconfidence, Optimism and Pessimism on the Rationality of the Individual Investors: An Empirical Analysis". *Pacific Business Review International*. 2017.

[15] D. Kahneman and A. Tversky. "Prospect Theory: An Analysis of Decision under Risk". *Econometric*, 1979, vol. *47*(2), pp. 263-291, 1979.

[16] J. S. Lee, P. H. Yen, and K. C. Chan. "Market states and disposition effect: Evidence from Taiwan mutual fund investors". *Applied Economics*, vol. *45*(10), pp. 1331-1342, 2013.

[17] H. Lin. "Elucidating rational investment decisions and behavioral biases: Evidence from the Taiwanese stock market". *African Journal of Business Management*, vol. *5*(5), pp. 1630-1631, 2011.

[18] C. Mertzanis and N. Allam. "Political Instability and Herding Behaviour: Evidence from Egypt's Stock Market". *Journal of Emerging Market Finance*, 2018, vol. *17*(1), pp. 29-59, 2018.

[19] F. Musciotto, L. Marotta, J. Piilo, and R. N. Mantegna. "Long-term ecology of investors in a financial market". *Palgrave Communications*, vol. *4*(1), pp. 92-102, 2018

[20] V. N. C. Mushinada and V. S. S. Veluri. "Investors overconfidence behaviour at Bombay Stock Exchange". *International Journal of Managerial Finance*, vol. *14*(5), pp. 613-632 2018.

[21] G. Niehaus and D. Shrider. "Framing and the disposition effect: Evidence from mutual fund investor redemption behavior". *Quantitative Finance*,vol. *14*(4), pp. 683-697, 2014

[22] T. Odean, M. A. Strahilevitz, and B. M. Barber. "Once Burned, Twice Shy: How Naïve Learning, Counterfactuals, and Regret Affect the Repurchase of Stocks Previously Sold". *SSRN*, 2010.

[23] M. Ormos and D. Timotity. "Unravelling the asymmetric volatility puzzle: A novel explanation of volatility through anchoring". *Economic Systems*, vol. *40*(3), pp. 345-354, 2016.

[24] M. Pelster and A. Hofmann,"About the fear of reputational loss: Social trading and the disposition effect". *Journal of Banking and Finance*, *94*, 75-88, 2018.

[25] N. Philippas, F. Economou, V. Babalos, and A. Kostakis, "Herding behavior in REITs: Novel tests and the role of financial crisis". *International Review of Financial Analysis*, vol. *29*, pp. 166-174. 2013.

[26] M. Qosim, R.Y. Hussain, I. Mehboob, and M. Arsad. "Impact of herding behavior and overconfidence on investors' decision-making in Pakistan". *Accounting*.pp81-90. 2018.

[27] N.M.D. Ratnadi, A.A.G.P. Widana Putra, IN.W.A. Putra. "Behavioral Factors Influencing Investment Decision-Making by College Student: An Empirical Study in Bali Provice, Indonesia". *International Journal of Scientific & Technology Research*, vol. 9(02), pp.1358-1368. 2020

[28] R. Sadi, A.S.L, H. B., M. R. Rostami, A. Gholipour, and F. Gholipour. "Behavioral Finance: The Explanation of Investors' Personality and Perceptual Biases Effects on Financial Decisions". *International Journal of Economics and Finance*, vol. *3(5)*, pp. *234-241*.2011.

[29] S. K. Sahi, A. P. Arora, and N. Dhameja. "An exploratory inquiry into the psychological biases in financial investment behavior". *Journal of Behavioral Finance*, vol. *14*(2), pp. 94–103. 2013.

[30] H. Shefrin. "Some New Evidence on Eva Companies". *Journal of Applied Corporate Finance*, vol. 22(1). Pp. 32-42, 2001
[31] H. M. Shefrin and R. H. Thaler, "The behavioral life-cycle hypothesis. *Economic Inquiry*, vol. *26*(4), pp. 609-643.1988.
[32] H. Shin and S. Park, "Do foreign investors mitigate anchoring bias in stock market? Evidence based on post-earnings announcement drift". *Pacific Basin Finance Journal*, vol. *48*, pp. 224-240. 2018.
[33] S. Singh, "The Role of Behavioral Finance in Modern Age Investment". *Pacific Business Review International*, vol. I(1), pp. 234-240, 2016.
[34] A. Tversky and D. Kahneman, "Psychological Review". *American Psychological Association*, vol. *80*(4). 1973.
[35] D. Wang, "Herd behavior towards the market index: evidence from 21 Financial Markets". IESE Business School Working Paper, 2008, No. 776.
[36] S. Yao, "New Sight of Herding Behavioural Through Trading Volume". Economics Discussion Paper No. 2010-11.
[37] H. Yu, and M. H. Ma, Q, and J. Jin. "They all do it, will you? Event-related potential evidence of herding behavior in online peer-to-peer lending", *Neuroscience Letters*, 2018, vol. *681*, pp. 1-5, 2018.
[38] M.L. Zindel, T. Zindel, M.G. Quirino, "Cognitive Bias and Their Implications on the Financial Market". *International Journal of Engineering & Technology*, vol. 14 (3), pp. 11-17. 2014.