HOW HEURISTICS AND HERDING BEHAVIOUR BIASES IMPACTING STOCK INVESTMENT DECISIONS WITH FINANCIAL LITERACY AS MODERATING VARIABLE

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ABSTRACT

This study aims to analyze how heuristics and herding behavior are influencing the investment decisions of individual investors in Indonesia. In the face of global uncertainty, it will be hard for investors to remain rational. When making stock market investments, many investors are driven by their emotions and biases. These behaviors might lead to losses due to a lack of proper analysis before investing. There has been a significant increase in the participation of investors, but the level of financial literacy is still low. Research on behavioral biases in investment decisions has been conducted, yet there's little literature on financial literacy as a moderating factor. Recent research has demonstrated that investors do not make perfectly rational financial decisions because they are subject to behavioral biases. This study focused on the impact of two independent variables, namely heuristic and herding bias variables, on one dependent variable, stock investment decisions, while considering financial literacy as a moderating variable. The main data gathering method was used to evaluate the proposed hypothesis. The PLS-SEM analysis approach was used to collect data from 118 participants using a structured questionnaire. The impact of the heuristic and herding variables on stock investment decisions had a positive and significant influence. However, the relationship between heuristics and herding variables in Indonesian individual investors' stock investment decisions was not weakened by financial literacy as a moderator. The significant growth of investors in the capital stock market might not give sufficient time for financial literacy to weaken behavioral biases. Investors' self-perception of financial literacy might not be as knowledgeable as their knowledge. The study's conclusions will assist investors in making logical, trustworthy, and profitable decisions, as well as policymakers, company owners, and other stock exchange stakeholders.

Keywords: Behavioral Finance Biases, Financial Literacy, Individual Investors, Stock Investment Decision

INTRODUCTION

Investment is a process of buying assets with the intention of earning income or appreciation in the form of income payments or capital gains. Investment is the flow of capital used to support a nation's economic expansion and development. The market and the growth of the nation are supported by investors. A developing nation, like Indonesia, requires a rising supply of money. Over the past few years, individual investors' participation in the financial markets has increased. One of the factors influencing Indonesia's capital market is the growth of the middle class, which has an increasing need for a variety of sophisticated financial services. Due to COVID-19 and increased investment awareness driven by the economy's uncertainty, there was a rise in the number of investors in the years 2020 and 2021.

By end of 2022, there was 10 million investors in the capital markets at the Indonesia Stock Exchange (IDX), a huge increase from the 2.48 million investors in 2019 (59% CAGR growth). According to the last national financial literacy and inclusion survey, conducted by the Indonesia Financial Authority Service (2022), Indonesian financial inclusion was at 85.1% on a national level and financial literacy was at 49.68%. Means that five out of ten people in Indonesia are not financially literate. The gap between financial inclusion and financial literacy means that they have not been completely effective in maximizing earnings to make long-term investments in the financial services sectors.

Investors will have a difficult time remaining rational in the face of global uncertainty. Many investors use their biases and emotions as driving forces when making stock market investments. It can result in a mistake where you make a loss or make money. Low financial literacy combined with the significant growth of the capital market might result in behavior bias playing a greater role in investment decisions. Are investors well-equipped for their financial decisions? Or do they invest due to fear of missing out or follow the crowd, while they're the ones who are responsible for the financial decisions.

Chhapra et al., 2018 mentioned that humans are known to make choices based on feelings and intuition rather than gathering enough knowledge to allow for wise decision-making. Bellofatto et al., 2018 mentioned that after controlling for gender, age, portfolio value, trading experience, and education, investors with higher levels of financial literacy appear to make wiser investment decisions. They trade more, and the dispositional impact does not always impact individuals that much.

Combining finance theory with psychology studies on human decision-making, behavior finance theory is claimed to be able to explain and understand financial market phenomena and volatility in the stock market. There is a lack of research in behavioral finance covering Indonesian young investors on the stock market. The scope of this study only covered Indonesian individual investors investing in the stock market with a demographic age below 40 (Millennials and Gen-Z).

There is a lot of research on investor decision-making and behavioral biases, but there is little study on developing countries like Indonesia. With the significant increase of individual investors in Indonesia stock market but with low literacy, hence, the paper will only focus on Indonesia Stock Market's investors to look at how behavioral biases affect investors' choices and helps to know how financial literacy affects behavior while making investment decisions. The objective of this study was to analyze and evaluate behavior biases (called heuristics and herding factors) on stock investment decisions and to examine the impact of financial literacy on weakening behavior biases while making stock investment decisions.

The results of this study are expected to provide input and contributions both practically and theoretically. Theoretically, this study contributes to the body of knowledge about investment decisions, especially the moderating role of financial literacy, which can also be used as reference material for further research. Practically, this study provides information and input for investors, the government, policymakers, and companies in the stock market to understand individual investors' behavior.

LITERATURE REVIEW

Traditional finance uses models where people are expected to be rational, efficient, and unbiased in processing relevant information. Decisions are consistent with utility maximization. While relatively new theory, behavior finance theory examines how psychological biases affect investors and reduces the strict rationality condition found in traditional finance theory. The grand theory used as the basis of this study is behavioral finance theory. Daniel Kahneman was awarded the 2002 Nobel Memorial Prize in Economic Sciences for his empirical findings, which challenge modern economic theory's presumption of human rationality. Richard H. Thaler was also awarded the Nobel Memorial Prize in Economic Sciences in 2017. Thaler's contributions developed Kahneman's and Trevsky's perspectives and a theory of mental accounting.

Making judgments is not always completely rational, when all relevant data is gathered and evaluated objectively; instead, the decision-maker takes mental shortcuts (Tversky & Kahneman, 1974). Heuristic theory is used as the middle theory for this study. Shahid & Sabir (2018) mentioned that investors at the Pakistan Stock Exchange rely on their previous knowledge when it comes to investing, prefer to buy hot stocks, and have outperformed the stock market based on their skill, which results in unexpected outcomes. These heuristic factors (anchoring, representativeness, and overconfidence) have a greater impact on the performance of the investors' decisions. According Shah et al., 2018 the heuristic bias (overconfidence, representativeness, and anchoring) has a negative impact on investment decisions and on perceived market efficiency. The inefficient market causes the price to deviate from its fundamental value. While Khan et al., 2017 mentioned that investors with a higher level of education and more experience are less likely to develop heuristic biases.

Herding was the practice of mimicking the investment decisions of other fund managers at the same time, and positive feedback trading was the practice of buying winners and selling losers. Following the herd and fear of missing out (FOMO) are phenomena that affect investment behavior. Individuals will begin acting irrationally and conducting little to no research before making financial decisions. Herding variables have a significant impact on investment decisions. (Chhapra et al., 2018). While the study from Hadianto et al., 2020 mentioned that herding does not have an effect on stock investment decisions, A study by P.H & Uchil, 2020 mentioned that herding behavior, market factors, and awareness factors (media, internet, social interaction, advocate recommendation) significantly influence investor sentiment and impact decision making.

As per the Organization for Economic Co-operation and Development (OECD) definition, financial literacy is a combination of awareness, knowledge, skill, attitude, and behavior necessary to make sound financial decisions and ultimately achieve individual financial wellbeing. Financial literacy is one of the factors supporting investors in reducing their behavior, which impacts their decision-making, which tends to be rational, and changing their behavior to become more positive, which will result in quality decision making (Siratan & Setiawan, 2021). Bellofatto et al., 2018 mentioned that investors who report higher levels of financial literacy seem to make wiser investment decisions. Jiang et al., 2020 mentioned that retail investors with more experience and education are more financially literate. To comprehend the actual behavior of investors, it is crucial to research behavioral biases and financial literacy.

RESEARCH METHOD

In the study, the stock investment decision has been taken as a dependent variable, while the heuristic and herding behavioral biases of the investors have been taken as independent variables. The author added financial literacy as a moderating variable. The main objective of the study is to investigate the impact of behavioral biases on investors' decisions, with financial literacy as a moderating variable. The population of this study is Indonesian individual investors who invested in Indonesia Stock Exchange with minimal 1 year experience and a demographic age below 40 years.

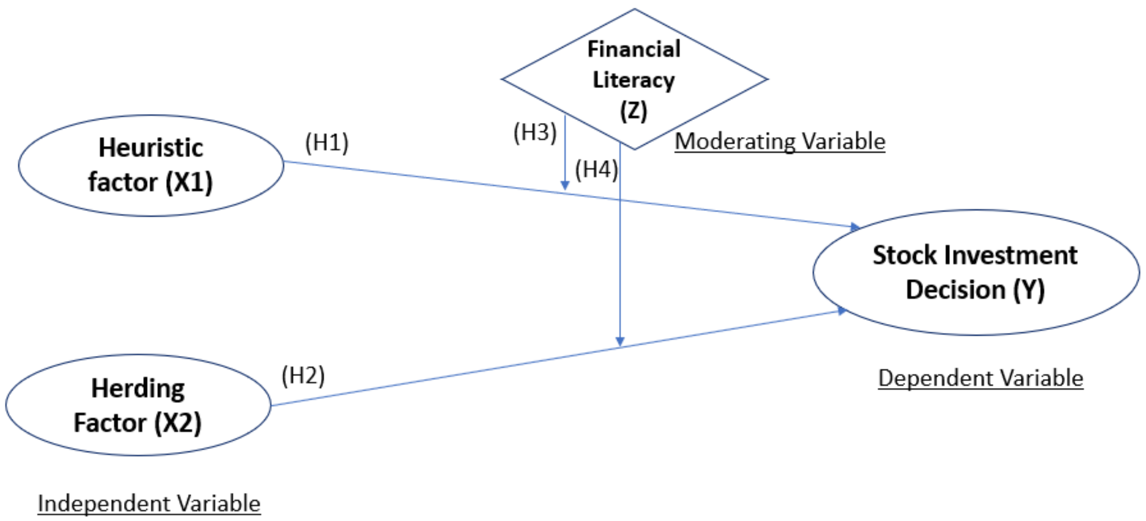
A survey questionnaire will be developed according to variables to collect the necessary data for this study using quantitative methodology. The source of data will be primary data. Structural Equation Modeling (PLS-SEM) software will be used to test the hypothesis.

The pilot study was performed to confirm the validity and reliability of the instrument and received the initial 30 responses. This study considers the Cohen Table and G-Power to target reasonable samples. To increase the generalizability of the findings, this study chose 100 samples above the Cohen Table technique and the G Power method. 100 samples are required at a minimum to obtain any kind of significant result. (Tabachnick & Fidell, 2001). In total, 118 usable final responses were collected from individual investors. The collected data were used to test the four proposed hypotheses.

The questionnaire asked about the demographics and socioeconomic information of individual investors. Most of the respondents were aged between 31 to 40. Data is collected through the questionnaires, which employ a Likert scale to test all the variables.

The questionnaire is divided into two parts: demographic individual information and behavioral factors impacting investment decisions. The variables are presented in a theoretical framework.

Figure 1. Research Framework



Research Hypothesis:

H1: Heuristic factors have positive influence on stock investment decision
H2: Herding factors have positive influence on stock investment decision
H3: Financial literacy as moderator weaken the relationship between heuristic factors and stock investment decision
H4: Financial literacy as moderator weaken the relationship between herding factors and stock investment decision

Survey Questionnaires are designed based on the theoretical background of Heuristic Theory and Herding Behavior. Operationalization of Variables are as follows:

Table 1. Operationalization of Variables

Variable	Indicator	Item	Measurement Item	Source
Heuristic Factor	Representativeness	HEU1	I buy 'hot' stocks and avoid stocks that performed poorly in the past.	Waweru et al., 2008
	Anchoring	HEU2	I forecast the changes in future stock prices based on recent stock prices.	
	Overconfidence	HEU3	I use predictive skills to time and outperform in stock market.	
	Gambler's Fallacy	HEU4	I am normally able to anticipate the end of good or poor market returns on IDX.	
Herding effects	Stock Type	HER1	My investment decision to purchase shares is influenced by decision of other investors.	Keswani et al., 2019
	Stock Volume	HER2	My decision to purchase volume of stock is affected by other investors purchase.	
	Buying and Selling Decision	HER3	Other investors' decision of buying and selling stocks has impact on my investment decision.	
	Market Reaction	HER4	I usually react quickly to the changes of other investors' decisions and follow their reaction to the stock market.	
Financial Literacy	Time Value of Money	FIL1	I understand the concept of time value of money	Author, 2023
	Inflation	FIL2	I understand the concept of inflation	
	Interest Compounding	FIL3	I understand the concept of interest compounding	
	Risk Diversification	FIL4	I understand the concept of risk diversification on my investment	
	Risk and Return	FIL5	I understand the concept of risk and return on my investment	

Stock Investment Decision	Buying Decision	INV1	Behavioral biases and emotions affect my stock buying decision.	Author, 2023
	Selling Decision	INV2	Behavioral biases and emotions affect my stock selling decision.	
	Hold Decision	INV3	Behavioral biases and emotions affect my stock holding decision.	

RESULT AND DISCUSSION

In this research sample, 64% of the respondents are male, and 75% are between 31 and 40 years of age. 65% of respondents have a bachelor's degree with employee as their main job. Mainly respondents' experiences are within 1–3 years or within the years 2020–2022, on the COVID period, where most people did activities at home. 31% of the respondent's portfolio is from Rp 10 million to Rp 50 million on the Indonesia Stock Exchange, followed by 24% from Rp 500 million to Rp 1 billion and 23% from Rp 100 million to Rp 500 million. Only 6% of respondents invested a relatively large amount of money above Rp 1 billion. The main source of information when making stock investment decisions is still social discussion with parents, friends, and acquaintances (29%), followed by information from financial institutions' applications, magazines, books (27%), and the internet (27%).

The first stage of the analysis is an assessment of the outer model or a measurement model evaluation that assesses the indicators with their latent variables and assesses the construct validity (Hair et al., 2014). For this research, a reflective measurement model is used. Three tests will be used to evaluate the measurement model: internal consistency, convergent validity, and discriminant validity. Cronbach's alpha and composite reliability minimum values are 0.7 (Hair et al., 2014). The convergent validity is confirmed by the Average Variance Extracted (AVE) value, which should be greater than 0.5 (Fornell & Larcker, 1981). Based on Table 2, all constructs achieved the minimum threshold, can be concluded to be internally consistent, and are declared valid.

Table 2. Internal Consistency and Convergent Validity Results

	Cronbach's Alpha >0.7	Composite Reliability > 0.7	AVE > 0.5	Results
Heuristic Factor	0,916	0,941	0,801	Accepted
Herding Factor	0,859	0,906	0,707	Accepted
Financial Literacy	0,887	0,915	0,683	Accepted
Stock Investment Decision	0,844	0,906	0,765	Accepted

Furthermore, in the data analysis, discriminant validity needs to be confirmed. It shows how each construct is different from the others. The factor loading cut-off value should be greater than 0.70 when considering cross-loading. The cross-loading findings were all larger than any of the other latent variables, as shown in Table 3, indicating that discriminant validity has been proven.

Table 3. Cross Loading

	Financial Literacy	Herding Factor	Heuristic Factor	Stock Investment Decision
FIL1	0,885	0,805	0,825	0,787
FIL2	0,850	0,678	0,653	0,573
FIL3	0,837	0,771	0,819	0,736
FIL4	0,865	0,686	0,717	0,595
FIL5	0,752	0,601	0,624	0,507
HER1	0,836	0,938	0,884	0,912
HER2	0,581	0,750	0,680	0,708
HER3	0,686	0,788	0,604	0,690
HER4	0,735	0,875	0,788	0,805
HEU1	0,712	0,798	0,810	0,802
HEU2	0,842	0,839	0,924	0,816
HEU3	0,805	0,873	0,918	0,850
HEU4	0,854	0,848	0,922	0,815
INV1	0,747	0,867	0,855	0,923
INV2	0,568	0,643	0,664	0,758
INV3	0,836	0,738	0,884	0,932

By utilizing the PLS-SEM bootstrapping procedure, testing and assessment of the significant association between variables could be carried out. There were four hypotheses from literature reviews to construct the research model. The PLS-SEM results would test each hypothesis and accept the hypothesis if it passed three criteria: a path coefficient value approaching +1 -1, a *t* value > 1.96, and a P value of < 0.05.

Table 4. Hypothesis testing of the relationship between variables

	Path Coefficient	Result	t (P) Values	Result
Heuristic (HEU) Factors -> Stock Investment Decision	0,384	Positive	4,452 (0,000)	Significant
Herding (HER) Factors -> Stock Investment Decision	0,740	Positive	8,366 (0,000)	Significant
HEU*Financial Literacy (FIL) -> Stock Investment Decision	0,170	Positive (1)	2,432 (0,985)	Not Significant (1)
HER*FIL -> Stock Investment Decision	-0,071	Negative	1,122 (0,262)	Not Significant

(1) the result is not in line with the hypothesis where the financial literacy should weaken the behavior bias on stock investment decision**.**

According to Table 4, the path coefficient of the relationship between the heuristic factor and stock investment decision was 0.384, which indicated that the effect was positive. Both the *t* value of 4.452 and the P value of 0.000 indicated a significant effect or relationship. Therefore, H_1: Heuristic factors have a positive influence on the stock investment decisions of Indonesian individual investors, is accepted. Investors prefer to buy hot stocks, make forecasts about the future, and rely their investing decisions more strongly on prior information at the Indonesia Stock Exchange. They also think they can outperform the market because of their knowledge of the stock market. This outcome is consistent with earlier research that showed heuristic behavior has a major impact on investment decision-making. (Shahid & Sabir, 2018; Shah et al., 2018 and; Khan et al., 2017).

On Table 4, the path coefficient for the relationship between the herding factor and stock investment decision was 0.740, which indicated that the effect was positive. Both the *t* value of 8.366 and the P value of 0.000 indicated a significant effect or relationship. Therefore, H_2: Herding factors have a positive influence on the stock investment decisions of Indonesian individual investors, is accepted. The phenomenon of an increased number of investors in Indonesia happened over the past three years during the COVID period. With a smaller number of experiences and following the crowd's behavior, this herd behavior had a positive effect on investment decisions. This outcome is consistent with earlier research that showed herding behavior has a major impact on investment decision-making. (Chhapra et al., 2018 and P.H & Uchil, 2020).

Both the relationship between the heuristic factor and stock investment decision was positive. This study supports the behavioral finance theory by Kahneman and Trevsky (1974), where investors become irrational in their financial decision-making, resulting in suboptimal decisions. When investors are aware of the psychological causes of irrational behavior, they can take corrective action to promote more rational behavior, which will eventually lead to the market becoming more efficient.

The path coefficient on the relationship between heuristic factor and stock investment decision with financial literacy as a weakening factor for the relationship was 0.170, which indicated that the effect was positive. while financial literacy should weaken or be negative based on hypotheses. Therefore, H_3: Financial literacy as a moderator weakens the relationship between heuristic factors and stock investment decisions of Indonesian individual investors.

The path coefficient on the relationship between herding factor and stock investment decision with financial literacy as the weakening factor for the relationship was -0.071, which indicated that the effect was negative. Both the *t* value of 1.122 and the P value of 0.262 indicated no significant effect or relationship. Therefore, H_4: Financial literacy as a moderator weakens the relationship between herding factors and stock investment decisions of Indonesian individual investors.

The results of H_3 and H_4 are not in line with previous studies stating that financial literacy has an influence on reducing financial behavior. As mentioned on literature review, Siratan & Setiawan, 2021; Bellofatto et al., 2018 and Jiang et al., 2020 mention that the higher the financial literacy, the better the influence on stock investment decisions.

The significant growth of capital stock market investors in the past 3 years and the lack of experience of investors might not provide a sufficient period for financial literacy to weaken behavioral biases. Investors think that they have sufficient financial literacy based on information accessed through the internet, apps, or discussions with acquaintances or friends. However, this study shows that the self-perception of financial literacy by investors might not *be as knowledgeable as their knowledge.*

CONCLUSIONS

The first goal of this research is to find a positive effect of behavioral biases on stock investment decisions. The study discovered that heuristic factors and herding factors have a positive impact on stock investment decisions. These findings are in line with the heuristic theory from Kahneman and Trevsky (1974), where people utilize heuristic factors to limit the risk of losses in uncertain situations, but doing so leads to judgmental errors or can be helpful in some situations. Research showed that when choosing which stocks to buy, sell, or hold, investors rely on third-party information. Investors end up making illogical decisions as a result, which can either cause the market to overreact or underreact, which makes the market inefficient. Investors need to rationalize their biases with technical and fundamental analysis, which can reduce impulsiveness, increase awareness, and create better investment decisions.

The second objective of this study is to examine and assess how financial literacy affects the influence of behavioral biases on stock investment decisions. The study found that financial literacy does not reduce behavioral biases in stock investment decisions. Financial literacy programs may not have been sufficient to address the whole process of financial development, or having financial literacy may not necessarily translate into making smart financial decisions. Other supporting factors might be considered, such as risk and return preferences from investors.

This study supports the behavioral finance theory, according to which investors make suboptimal financial decisions because of their illogical behavior. The practical implementation of this study is to provide stakeholders with inputs for managing behavioral biases in Indonesia, on how to improve investment decisions and generate market efficiency, realizing the potential of a growing market in Indonesia market. Research culture should be promoted, and more investors should be trained so they can enhance their knowledge in this field and make rational decisions that result in optimal profit.

The study's findings are intended to make a contribution to investors by helping them make rational, reliable, and profitable judgments and to policymakers by educating the market, companies, and other stakeholders on the stock exchange.

The current study is limited to heuristics and herding behaviors. Future studies could be conducted on other behavioral biases, such as cognitive biases, hindsight biases, and prospect factors. Moreover, socio-demographic variables, risk perception, and long-term orientation could be added as moderating or mediating variables. In future studies, the questionnaires can be designed by adding the financial literacy tests with the big 3 OECD knowledge questions, such as compound interest, inflation, and risk diversification. In addition, extended coverage of other financial products, such as cryptocurrency or robo trading, with a larger sample size and diverse financial investors could be added to confirm and validate the outcome of the study. Therefore, a broad range of behavioral factors and a large sample are more appropriate to clarify the impact of behavioral biases on investors' decisions. The methodology used in this study could be modified and useful for carrying out future research by looking at other various stock markets around the world.

REFERENCES

Bellofatto, A., D'Hondt, C., & de Winne, R. (2018). Subjective Financial Literacy and Retail Investors' Behavior. *Journal of Banking and Finance*, *92*. https://doi.org/10.1016/j.jbankfin.2018.05.004

Chhapra, I. U., Kashif, M., Rehan, R., & Bai, A. (2018). An Empirical Investigation of Investor's Behavioral Biases on Financial Decision Making. *Asian Journal of Empirical Research*, *8*(3), 99-109. https://doi.org/10.18488/journal.1007/2018.7.3/1007.3.99.109

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Hadianto, B., Winarto, J., & Angginia Nastiti Suwarno, N. (2020). The Herding and Overconfidence Effect on the Decision of Individuals to Invest Stocks. *The Asian Institute of Research Journal of Economics and Business*, *3*(4), 1387–1397. https://doi.org/10.31014/aior.1992.03.04.288

Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial Least Squares Structural Equation Modeling (PLS-SEM): An Emerging Tool in Business Research. In *European Business Review* (Vol. 26, Issue 2), pp.106-121. https://doi.org/10.1108/EBR-10-2013-0128

Jiang, J., Liao, L., Wang, Z., & Xiang, H. (2020). Financial Literacy and Retail Investors' Financial Welfare: Evidence from Mutual Fund Investment Outcomes in China. *Pacific Basin Finance Journal*, *59*. https://doi.org/10.1016/j.pacfin.2019.101242

Keswani, S., Dhingra, V., & Wadhwa, B. (2019). Impact of Behavioral Factors in Making Investment Decisions and Performance: Study on Investors of National Stock Exchange. *International Journal of Economics and Finance*, *11*(8), 1-80. https://doi.org/10.5539/ijef.v11n8p80

Khan, H. H., Naz, I., Qureshi, F., & Ghafoor, A. (2017). Heuristics and Stock Buying Decision: Evidence from Malaysian and Pakistani Stock Markets. *Borsa Istanbul Review*, *17*(2). pp. 97-110. https://doi.org/10.1016/j.bir.2016.12.002

P.H, H., & Uchil, R. (2020). Impact of Investor Sentiment on Decision-Making in Indian Stock Market: An Empirical Analysis. *Journal of Advances in Management Research*, *17*(1). 66-83. https://doi.org/10.1108/JAMR-03-2019-0041

Shah, S. Z. A., Ahmad, M., & Mahmood, F. (2018). Heuristic Biases in Investment Decision-Making and Perceived Market Efficiency: A Survey at the Pakistan Stock Exchange. *Qualitative Research in Financial Markets*, *10*(1), 85–110. https://doi.org/10.1108/QRFM-04-2017-0033

Shahid, M. N., & Sabir, S. (2018). Impact of Behavior Biases on Investors' Decisions: Evidence from Pakistan Celebrity Endorsement View Project Behavior of Calendar Anomalies, Market Conditions and Adaptive Market Hypothesis: Evidence from Pakistan Stock Exchange View project, *45-55*. https://www.researchgate.net/publication/330170327

Siratan, E. D., & Setiawan, T. (2021). Pengaruh Faktor Demografi dan Literasi keuangan dengan Behavior Finance dalam Pengambilan Keputusan Investasi. *Esensi: Jurnal Bisnis Dan Manajemen*, *11*(2), 237–248. https://doi.org/10.15408/ess.v11i2.23671

Tabachnick, B. G., & Fidell, L. S. (2001). 4th Edition, Allyn and Bacon, Boston. In *Using Multivariate Statistics*.

Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and biases. *Science*, *185*(4157). https://doi.org/10.1126/science.185.4157.1124

Waweru, N. M., Munyoki, E., & Uliana, E. (2008). The Effects of Behavioral Factors in Investment Decision-Making: A Survey of Institutional Investors Operating at the Nairobi Stock Exchange. *International Journal of Business and Emerging Markets*, *1*(1), 24-41. https://doi.org/10.1504/ijbem.2008.019243

Otoritas Jasa Keuangan (2022, October 31, 8.00 PM). Statistik Pasar Modal Indonesia. *OJK Website.* https://www.ojk.go.id/id/kanal/pasar-modal/data-dan-statistik/statistik-pasar-modal/default.aspx

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