THE EFFECT OF AVAILABILITY BIAS AND REPRESENTATIVENESS BIAS ON INVESTMENT DECISIONS AMONG MILLENNIALS AND GEN Z IN INDONESIA

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ABSTRAK

  Investasi merupakan tahapan lebih tinggi dari sekedar menabung dibank. Investasi diharapkan bias menjadi penolong dengan berubahnya nilai mata uang akibat inflasi. Milenial dan Gen Z merupakan generasi yang ikut berperan besar dalam pasar modal namun banyak dari mereka bertindak ceroboh dalam berinvestasi diantaranya akibat bias dalam investasi mereka. Tujuan dari penelitian ini adalah meneliti lebih lanjut penelitian sebelumnya dengan menggunakan metode yang berbeda yang diharapkan dapat menyempurnakan penelitian terkait bias availability dan bias representativeness di Indonesia. Metode penelitian kuantitatif. Populasi dalam penelitian ini adalah investor gen z dan milenial di Indonesia. Sampel pada penelitian ini berjumlah 120 sampel. Teknik pengambilan sampel yang digunakan dalam penelitian ini purposive sampling yaitu teknik sampel berdasarkan kriteria. Kriteria pada penelitian ini yaitu investor dengan rentang usia 17-35 tahun dan minimal pengalaman 6 bulan dibidang investasi. Hasil dari penelitian ini Bias Availability dan Bias Representativeness berpengaruh positif dan signifikan terhadap keputusan investasi pada milenial dan Gen Z di Indonesia. Dapat diketahui pula sebesar 14,7% Keputusan Investasi dipengaruhi oleh variabel Availability Bias dan Representativeness Bias, sedangkan 85,3% sisanya dipengaruhi oleh variabel lain.

Kata Kunci*: Bias Availability; Bias Representativeness; Keputusan Investasi*

ABSTRACT

  The investment represents a more advanced financial activity than solely depositing funds in a bank for safekeeping. The investment is anticipated to mitigate the effect of inflation on the fluctuation of the currency's worth. Millennials and Generation Z are demographic cohorts that significantly affect the capital market; nonetheless, numerous individuals within these generations exhibit imprudent investment behaviour, primarily attributable to biases in their investment decisions. The research aimed to critically examine prior studies employing different methods to further the understanding of availability bias and representativeness bias in Indonesia. The study utilised a quantitative method. The participants of this study consisted of investors from the Gen Z and millennial cohorts in Indonesia. The sample size in this investigation consisted of 120 samples. The sampling technique employed in this study was purposive sampling, namel7 a strategy selecting participants based on predetermined criteria. The study's criteria encompassed individuals classified as investors, falling within the age range of 17 to 35 years, and possessing a minimum of 6 months of expertise in the field of investment. This study's findings indicated that bias availability and bias affected statistically significant and positively affected investment decision-making among millennials and Gen Z individuals in Indonesia. The data revealed that 14.7% of investment decisions are affected by variables related to availability bias and representativeness bias, with the remaining 85.3% being affected by other variables.

Keywords*: Availability Bias; Representativeness Bias; Investment Decision*

I. Pendahuluan

Investment refers to allocating capital, typically in the form of monetary funds or valuable assets, to an entity, organisation, or individual, expecting the investment to yield a financial gain within a specified timeframe. Investment is sometimes referred to as capital investment due to the anticipation of future profitability (Danso et al., 2019). According to Williamson and Komljenovic (2023), *Investment* can be defined as allocating financial resources towards acquiring capital goods in the present, with the expectation that these capital goods will generate a stream of new products in the future. According to Rahman and Gan (2020), investment refers to allocating financial resources in the present to generate future returns.

Investing involves committing money or capital to an asset, venture, or project with the expectation of obtaining an additional income or profit. There are various forms of investments, each with its own level of risk and potential return. Here are some common types of investments: Stocks: Buying shares of a company's stock means you own a piece of that company. Stock values can fluctuate based on the company's performance and market conditions. Bonds: Bonds are debt securities where you lend money to a government or corporation in exchange for periodic interest payments and the return of the principal amount at maturity. Real Estate: Investing in real estate involves purchasing properties with the goal of generating rental income or realizing capital appreciation over time. Mutual Funds: Mutual funds pool money from multiple investors to invest in a diversified portfolio of stocks, bonds, or other securities managed by a professional fund manager.

Exchange-Traded Funds (ETFs): Similar to mutual funds, ETFs are investment funds that are traded on stock exchanges. They often track an index, commodity, or a basket of assets. Cryptocurrencies: Digital or virtual currencies that use cryptography for security. Bitcoin, Ethereum, and other cryptocurrencies are examples. Commodities: Investing in physical goods such as gold, silver, oil, or agricultural products. This can be done through buying the actual commodities or through financial instruments tied to their value. Retirement Accounts: Contributing to retirement accounts such as 401(k)s or IRAs allows individuals to invest in a tax-advantaged manner for their future.
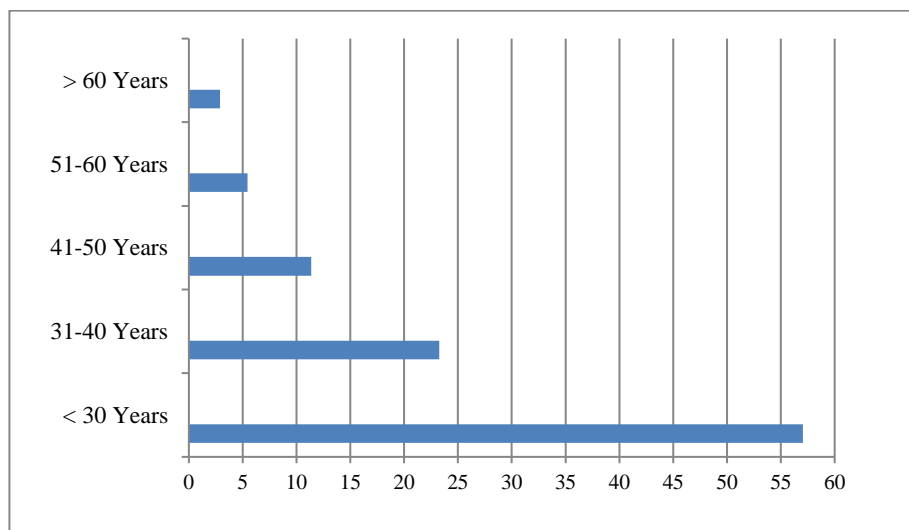

Figure 1. Proportion of Indonesian Capital Market Investors By Age Group (August 2023) in per cent. Source: KSEI

The source of information is the Indonesian Central Securities Depository (KSEI). According to data from the Indonesian Central Securities Depository (KSEI), the Indonesian capital market is home to an estimated 11.5 million individual investors as of August 2023.

A total of 57.04% of the population is under the age range of 30 years and below; on the other hand, 23.27% are between the ages of 31 and 40. According to a study conducted by Databoks in 2023, it is evident that the national capital market investors are primarily comprised of individuals belonging to the Generation Z and millennial cohorts. According to the data, 11.36% of individual investors fell within the age range of 41-50, 5.44% were aged 51-60, and 2.88% were categorised as above 60. Although younger investors make up the most significant proportion, their asset value could be more significant. In August 2023, the aggregate value of assets held by investors who are 30 years old or younger amounted to IDR 50.51 trillion. During the corresponding time frame, the aggregate assets of individuals between the ages of 31 and 40 amounted to IDR 112.92 trillion; on the other hand, investors aged 41-50 collectively possessed assets valued at IDR 173.15 trillion. According to KSEI's databooks for the year 2023, it was observed that investors in the age range of 51-60 possessed a collective asset value of IDR 250.59 trillion. Notably, investors aged 60 and above held the highest combined assets, amounting to IDR 896.44 trillion (databoks, 2023).

Based on the previous data, the Millennial generation and Generation Z significantly affect the capital market as of August 2023. This prevailing trend of government assistance facilitates the educational process for the younger demographic, encouraging their active involvement in investment activities. In August 2023, the Ministry of Finance of the Republic of Indonesia (Kemenkeu RI), Bank Indonesia (BI), the Financial Services Authority (OJK), and the Deposit Insurance Corporation (LPS) reconvened in the Coordination Forum for Development Financing through Financial Markets (FK-PPPK) to facilitate the Leading Indonesian Financial Literacy (Like It) programme. This initiative aims to educate and enhance the financial literacy of the young generation of Indonesian business actors who possess it. Furthermore, it is imperative for millennials and Generation Z, who play pivotal roles across multiple sectors in contemporary society, to be adequately equipped to confront the swift transformations characteristic of our period (Bank Indonesia, 2023).

When making investment decisions, investors frequently encounter numerous circumstances that generate uncertainty, leading to indecisiveness. These factors significantly affect the selection of investment options and the pursuit of maximising profitability. The behaviours exhibited by investors, particularly those of a younger age, often display irrational tendencies that defy explanations within the framework of investing theory. Consequently, investment theory is advancing by focusing on many dimensions of investor conduct inside the capital market. The field of study known as behavioural finance is often referred to as Mun-cullah. Behavioural finance is an interdisciplinary field that connects three distinct disciplines: finance, sociology, and psychology (Candy & Vincent, 2021). A more comprehensive examination of behavioural biases is necessary to get insights into irrational investor conduct. Bias can be defined as a departure from the accurate and optimal decision-making process (Puspawati & Yohananda, 2022).

One facet of the field of behavioural finance pertains to the manifestation of biases resulting from psychological factors in financial decisions. The presence of bias can potentially obfuscate crucial information that may benefit investors. Hence, an investor must possess a comprehensive understanding of behavioural finance to mitigate the effect of biases while making investing decisions.

II. LITERATURE REVIEW

A. Bias

According to Maniscalco et al. (2021), a heuristic is a cognitive strategy individuals employ to make judgements efficiently by relying on mental shortcuts, which may lead to suboptimal or incorrect decision-making outcomes. One of the cognitive biases observed in decision-making is the availability bias (Philips-Wren et al., 2019), which refers to the

tendency of individuals to place greater reliance on information that is readily accessible to them. The phenomenon of availability bias arises when decision-makers heavily depend on information that is readily accessible to them (Siraji, 2019). One instance is when an individual encounters information about World War 3 and promptly accepts it without further inquiry to ascertain its veracity or discern whether it is merely a prevailing societal perception.

Representative prejudice refers to a cognitive bias wherein individuals excessively rely on stereotypes or analogies when making decisions. This bias manifests when investors base their conclusions on analogies and perceptions derived from external sources rather than objective information (Leković, 2020). Representatives can be characterised as an individual's inclination to employ cognitive shortcuts when drawing inferences, assuming that a particular entity encountered represents a larger group (Istomin and Dwyer, 2021). The relationship between the Representativeness bias and investment decision-making lies in the tendency of investors to make investment decisions based on their previous experiences. The potential outcome of the investment may not align with the desired results, rendering this situation intricate for the individuals involved to acknowledge. Furthermore, grappling with their lapses in judgment proves similarly challenging. It is imperative for investors to diligently monitor historical data and seek guidance from experts in order to effectively track and analyse prior trends (Nabipour et al., 2020).

According to Rasheed et al. (2018), there are four signs of availability bias: (1) investors like to buy stocks when the stock market index goes up; (2) investors choose to invest in domestic stocks over overseas stocks because information about domestic stocks is easier to find; (3) investors use information from people around them to help them make investment decisions; and (4) investors act when rumours are going around in the market.

The indicators of representativeness bias include (1) Investing in stocks of renowned companies that exhibit exceptional performance, (2) Incorporating considerations of corporate social responsibility into investment decisions, (3) Purchasing stocks that are currently favoured by a large number of investors and avoiding stocks with a history of poor performance, and (4) Refraining from investing in stocks associated with inappropriate products, such as adult entertainment, tobacco, and companies employing child labour (Ekatama, 2021).

The indicators of investment decisions encompass several key factors. (1) a fundamental understanding of investing in the capital market is crucial. (2), possessing knowledge of financial management is essential. (3), being well-versed in the art of investing money is paramount. (4) having a comprehensive understanding of budgeting money is of utmost importance (Khanza et al., 2022).

The effect of Availability Bias on investment decisions is positive and statistically significant in prior studies conducted by Fatima and Waqas (2016) and Hasika and Candra (2020). The concept of availability bias refers to the cognitive tendency of individuals to rely on readily available information or examples when making judgements or decisions. This phenomenon leads individuals to evaluate previous judgements in light of more recent knowledge and generate new ideas affected by this cognitive bias. According to prior studies conducted by Souza et al., (2023) as well as Kasoga (2021), it has been observed that representational bias exerts a positive and statistically significant effect on investment decision-making. The positive correlation between an investor's susceptibility to representativeness bias, tendency to engage in herding behaviour, and involvement in capital market training is associated with increased investment decisions.
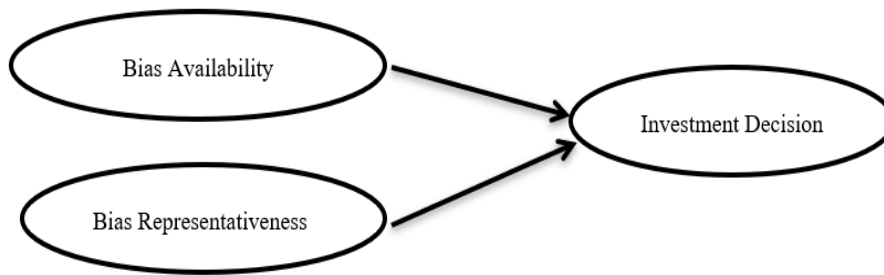
Figure 2. Conceptual Framework

Hypothesis:
H1: It is suspected that Availability Bias affects Investment Decisions
H2: It is suspected that Representativeness Bias affects Investment Decisions

The research presented in this study offers a fresh approach by employing quantitative research methods and providing a more comprehensive analysis of respondent characteristics, explicitly focusing on the Gen Z and millennial cohorts. These cohorts are anticipated to enhance prior research findings by utilising distinct methodologies. The study's findings indicated a significant effect of availability and representativeness bias on investment decisions. Hence, scholars are inclined to investigate "the effect of availability bias and representativeness bias on investment choices among Indonesia's millennial and Gen Z populations."

B. Partial least square (PLS)

PLS is a technique used to predict models with many factors (Shmueli et al., 2019 and Hair et al., 2019). The aim of using SMART PLS is to predict relationships between constructs, confirm theories, and relationships between latent variables. SMART PLS is divided into 2 models, namely, Outer Model and Inner model (Wilson., 2019). The outer model consists of reliability tests and validity tests, while the inner model consists of coefficients of determination and hypothesis tests.

PLS was first developed by Hermann Wold in 1966. This method was developed with the aim of overcoming multicollinearity problems in regression analysis. Multicollinearity problems occur when two or more independent variables have a strong correlation between them. This can cause problems in determining the true effect of each independent variable on the dependent variable.

In PLS, the independent variables and dependent variables are processed in matrix form. This method then performs dimensionality reduction on these matrices using singular value decomposition (SVD). SVD is a method for decomposing a matrix into a product of three matrices: a singular matrix, a left singular vector matrix, and a right singular vector matrix.

After these matrices are reduced, PLS will build a regression model that connects the independent variable with the dependent variable. This model is constructed by finding the most significant components of each matrix. These components are used to build an optimal regression model.

The advantage of SMART PLS is that it does not require normally distributed research data (Johan et al., 2020). And another advantage is that it can be used in small sample sizes. However, even though there are advantages, SMART PLS certainly has disadvantages, namely, the data distribution cannot be known with certainty and this means that statistical significance cannot be assessed, but this weakness can be overcome with the Bootstrapping method (Wong, 2019).

The different functions of each program, which are actually the same, can be used to analyze path diagram model research. In the SPSS program, path analysis can be analyzed in stages by carrying out linear regression. Meanwhile, in SMART PLS, path analysis can be carried out directly in just one test, and also using SMART PLS can analyze path graphs at once.

The use of Smart PLS is highly recommended when we have a limited number of samples, even though the model being built is complex. The aim of using SMART PLS is to predict relationships between constructs, confirm theory and can also be used to explain whether there is a relationship or not between latent variables.

III. RESEARCH METHODOLOGY

This study employed a combination of associative research and quantitative research methodologies. The participants of this study consisted of investors from the Gen Z and millennial cohorts in Indonesia. The sample size in this investigation comprised 120 samples. The sampling technique employed in this study was purposive sampling, a strategy that selects participants based on predetermined criteria. The criteria utilised in this study encompassed individuals classified as investors, falling between the age bracket of 17 to 35 years, and possessing a minimum of 6 months of expertise in the field of investment. The data in this study were analysed using clever PLS software. The measurement scale employed in this study encompasses a Likert scale for all variables.

IV. RESULT AND DISCUSSION

A. Outer Model

The inner model represents the structural relationships between latent variables. It describes how the latent constructs influence each other and the relationships between latent variables and the dependent variable(s).

Assessing the outer model is crucial in PLS because it ensures that the indicators adequately represent the latent constructs. If the outer model is not well-specified, it can lead to biased estimates in the inner model.

In summary, the outer model in PLS focuses on evaluating the measurement quality of the observed variables in relation to the latent constructs, providing a foundation for the subsequent analysis of structural relationships in the inner model. The convergent validity test was completed through an analysis of the Loading Factor value of each indicator on its construct with a minimum limit of 0.70. Based on Chart 1, there are several values < 0.70 but have been > 0.50. Thus, it can be concluded that the measurement has met the criteria for convergent validity (Chin).
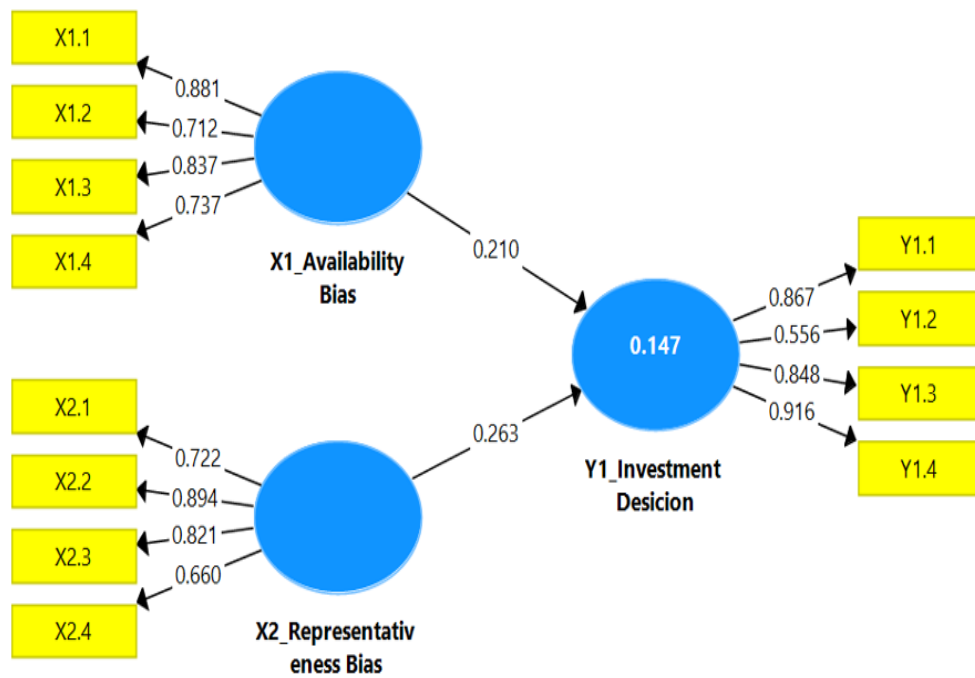
Figure 2. PLS Model Test Results

Convergent Validity

    An indicator is declared valid as an appropriate measuring tool if the Outer Loading value is > 0.70. To find out the results of convergent validity between indicators and variables, it is obtained from the Outer Loading results. Based on Table 1, there are several values < 0.70 but have been > 0.50. Thus, it can be concluded that the measurement has met the criteria for convergent validity (Chin).

TABLE 1
OUTER LOADING

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
X1.1<- X1_Availability Bias	0,881	0,851	0,137	6,413	0,000
X1.2<- X1_Availability Bias	0,712	0,667	0,176	4,049	0,000
X1.3<- X1_Availability Bias	0,837	0,812	0,144	5,813	0,000
X1.4<- X1_Availability Bias	0,737	0,704	0,162	4,547	0,000
X2.1<- X2_Representativeness Bias	0,722	0,652	0,228	3,171	0,002
X2.2<- X2_Representativeness Bias	0,894	0,843	0,165	5,406	0,000
X2.3<- X2_Representativeness Bias	0,821	0,796	0,154	5,325	0,000

X2.4<- X2_Representativeness Bias	0,660	0,613	0,208	3,166	0,002
Y1.1<- Y1_Investment Decision	0,867	0,848	0,066	13,201	0,000
Y1.2<- Y1_Investment Decision	0,556	0,547	0,161	3,443	0,001
Y1.3<- Y1_Investment Decision	0,848	0,839	0,082	10,325	0,000
Y1.4<- Y1_Investment Decision	0,916	0,903	0,072	12,755	0,000

(Source: Output of SmartPLS 3.0, 2023)

Convergent validity is also assessed through the Average Variance Extracted (AVE) value for each construct with a minimum limit of 0.50. Based on Table 2, all AVE values are > 0.50, so it can be concluded that the measurements have met the convergent validity criteria and are declared ideal.

TABLE 2
AVERAGE VARIANCE EXTRACTED (AVE) VALUE

	Average Variance Extracted (AVE)
X1_Availability Bias	0,632
X2_Representativeness Bias	0,607
Y1_Investment Decision	0,654

(Source: Output of SmartPLS 3.0, 2023)

Discriminant Validity

The second validity test was carried out through a discriminant validity test. Discriminant validity is fulfilled if the square root coefficient of AVE or Fornell Larcker is ideally greater than the correlation coefficient between latent variables. Discriminant validity is declared good if it has a coefficient value > 0.70. Based on Table 3, it is known that all Fornell Larcker values are > 0.70. Thus, it can be concluded that discriminant validity is fulfilled.

TABLE 3
DISCRIMINANT VALIDITY

	X1_Availability Bias	X2_Representativeness Bias	Y1_Investment Decision
X1_Availability Bias	0,795		
X2_Representativeness Bias	0,310	0,779	
Y1_Investment Decision	0,291	0,328	0,809

(Source: Output of SmartPLS 3.0, 2023)

Reliability Test

A questionnaire can be said to be reliable if the limit value of Construct Reliability and Validity: Cronbach's Alpha and Composite Reliability is > 0.70. Reliability tests were carried out to measure the consistency of respondents' answers. Table 4 shows Construct Reliability and Validity: Cronbach's Alpha and Composite Reliability have all coefficient

values above 0.70 so that the respondents' answers are declared consistent and the research questionnaire is declared reliable.

TABLE 4
RELIABILITY TEST

	Cronbach's Alpha	Composite Reliability
X1_Availability Bias	0,827	0,872
X2_Representativeness Bias	0,787	0,859
Y1_Investment Decision	0,832	0,880

(Source: Output of SmartPLS 3.0, 2023)

Inner Model
Fit Model

TABLE 5
FIT MODEL

	R2	Q²	SRMR	NFI
Y1_Investment Decision	0,147	0,062	0,108	0,649

(Source: Output of SmartPLS 3.0, 2023)

R Square

Accuracy model or fit model testing is carried out through several tests. The first test is R-square, where according to Ghozali and Latan, a value of 0.750 means the model is strong, a value of 0.500 means the model is quite moderate, and if the value is 0.250, the model is weak. In Table 5, it can be seen that the R2 value is 0.147, so it can be said that it is quite weak. It can also be seen that 14.7% of Investment Decisions are influenced by the Availability Bias and Representativeness Bias variables, while other variables influence the remaining 85.3%.

Q Square

A Prediction Relevance (Q²) or Stone-Geisser test is carried out to validate the model's predictive ability. Table 5 shows the Q² value > 0. So the predictive ability of the independent variable X1 and X2 models is appropriate and can predict the dependent variable Y.

Fit Model

The results of the Standardized Root Mean Square (SRMR) show a value of 0.108, which is > 0.100, so it can be said that the model applied almost matches the correlation. Furthermore, the Normal Fit Index (NFI) value shows a value of 0.649 or almost close to 1, so the model used is good and appropriate.

Hypothesis Testing

Hypothesis testing is carried out through a direct influence significance test, which aims to test the influence of the independent variable on the dependent variable. Hypothesis testing is carried out through three tests, including the t-test (t-statistic), p-value, and path coefficients. Hypothesis testing in this research was carried out through direct testing using the SEM PLS analysis method:

TABLE 6
HYPOTHESIS TESTING

	Original Sample (O)	Sample e	Standard Deviatio	T Statistics (|O/STDEV|)	P Values

	Mean (M)	n (STDEV)		
X1_Availability Bias -> Y1_Investment Decision	0,210	0,227	0,101	2,071	0,039
X2_Representativeness Bias -> Y1_Investment Decision	0,263	0,302	0,110	2,387	0,017

(Source: Output of SmartPLS 3.0, 2023)

t-Test

The significant influence that a variable has is obtained when the t-statistic value > t-table value (critical value) at α = 0.05. It can be seen that the t-table, in general, is 1.96. From Table 6, it can be seen that the t-statistic value for all hypotheses is more than 1.96, meaning that there is a significant direct influence between the independent variable X on the dependent variable Y.

P-values

P-values testing is carried out by comparing the p-value coefficient values with the t-table (α = 0.05), where alpha is the maximum error rate allowed in a study. The p-values for all hypotheses are less than (<) 0.05, meaning there is a significant direct influence between the independent variable X and the dependent variable Y.

Original Sample

The original sample was used for hypothesis testing. In the output results, the path coefficient value for the hypothesis of X1 -> Y is 0.210, and the hypothesis of X2 -> Y is 0.263, so the two independent variables X1 and X2 have a direct positive effect on the dependent variable Y.

B. Discussion

Availability Bias on Investment Decisions

Based on the results of the research analysis shows that Availability Bias has a significant and positive direct influence on Investment Decisions. This research is in line with (Fatima and Waqas, 2016) and (Hasika and Candra, 2020), which states that there is a direct positive and significant relationship between Availability Bias and Investment Decisions, meaning that a high level of good Availability Bias can improve Investment Decisions.

Representativeness Bias on Investment Decisions

Based on the results of the research analysis shows that Representativeness Bias has a significant and positive direct influence on Investment Decisions. This research is in line with (Ayuk and Trianto, 2023) and (Johny and Patricia, 2021) which states that there is a direct positive and significant relationship between Representativeness Bias and Investment Decisions. So, it can be interpreted that a high level of good Representativeness Bias will improve Investment Decisions.

V. CONCLUSION

The study's findings, which were analysed using SMART PLS software, indicated that availability bias significantly and positively affected investment decisions. In addition, representativeness bias significantly and positively affected investment decision-making. It is suggested that future research include moderation and bias in financial behaviour

variables. Furthermore, researchers are expected to augment the number of respondents and respondent characteristics.

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