Unsystematic Risk Management Based on Financial Literacy as a Supporting Factor in Investment Decisions

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ABSTRACT

This research examines financial literacy's influence on investment decisions through unsystematic risk management. The data source used in this research is primary data obtained through a questionnaire. The sampling technique used was purposive sampling, using sample criteria to enter as a research sample. This research involved 88 respondents as research samples. The analytical tool used to carry out statistical tests is SmartPLS. This study found that financial literacy and unsystematic risk management simultaneously had a significant positive effect on investment decisions. Unsystematic risk management has a significant positive effect on investment decisions. Furthermore, unsystematic risk management can mediate the relationship between financial literacy and investment decisions. This study highlights investor behavior in making investment decisions using the theory of planned behavior approach.

1. Introduction

Making good investment decisions is an important goal and desire of all investors worldwide. Efficient investment decisions are influenced by many factors, such as investment knowledge, investment intentions leading to investment behavior, and other factors that can influence them (Sathiyamurthi et al., 2021). According to Dhar & Zhu, (2006), knowledge and information play an important role in helping investors make the right decisions at all times. Investment decision-making is sometimes only sometimes done rationally but rather irrationally.

In the traditional financial view, investors can be assumed to be rational and have sufficient knowledge to make rational decisions. However, on the other hand, some investors need more knowledge related to the investment world (Rahman & Gan, 2020). So, along the way, investors sometimes experience failure and align the returns from investments with the existing level of risk (Hoffmann & Post, 2017). Risk includes investors' failure to carry out investment activities. Therefore, risks need to be minimized by managing them because they cannot be avoided, but their occurrence can be minimized. Investment risk may occur because investors are too quick to conclude that it turns out the stock could be more profitable or heuristic. Investors must update these beliefs quickly to avoid future risks (Li *et al.*, 2008).

Risk management is part of an alternative to minimize the occurrence of risks (Jackson, 2010). Rational investors always use efficient portfolio diversification to eliminate risk (Paquin *et al.*, 2016). In addition, rational investors can act more plannedly to have strong control over every decision (Ajzen, 1991). This can support investors in minimizing high investment risks, namely by carrying out investment risk management. This is very relevant to the theory of planned behaviour. Investors can stop investing in risky assets and then reinvest in risk-free assets (Li & Wu, 2008). Thus, it can be concluded that risks can be minimized or avoided with a person's knowledge and good control skills to make every decision as planned (Patil & Bagodi, 2021).

Quoting what was conveyed by Lukas Setia Atmaja at the Capital Market Summit and Expo 2019 East Java, he stated that the number of investors in 2019 as of March increased by 150% compared to the previous year. However, along with this increase, the number of investors who failed to invest reached 85% to 90%. Lukas continued that investors who fail are generally due to a lack of knowledge related to the world of investment. Lack of financial literacy is one of the factors that influences failure to make investment decisions (Widiyastuti & Nashirudin, 2022). Apart from phenomena related to investment interest, several studies related to financial knowledge on investment interest state that financial knowledge does not significantly influence investment interest. Research conducted by (Junianto *et al.*, 2020; Hamza & Arif, 2019) whose research shows that financial knowledge has no significant effect on investment interest.

Based on the problems and gap phenomena above, researchers are interested in conducting research by testing the influence of financial literacy knowledge on investment interest, which is mediated by unsystematic risk management. The aim of this research is first to examine the influence of financial literacy on investment interest. Second, to test the influence of financial literacy on unsystematic risk management. Third, to test the influence of unsystematic risk management on investment interest. Moreover fourth, to test the influence of financial literacy on investment interest, which is mediated by unsystematic risk management.

2. Literature Review

Theory of Plannd Behavior

Behaviour is a factor that influences someone to take action or decision (Antony & Joseph, 2019). Planned behaviour, known as the theory of planned behaviour, is an individual's attitude towards a behaviour, perceived control, and subjective norms that can influence intentions in making a decision (Ajzen, 1991). Someone with high behavioural control can make planned decisions to reduce the high risk of these decisions. In addition, high behavioural control can be more thorough in dealing with each risk by carrying out good risk management (Falahati et al., 2012)

Furthermore, the attitude of behaviour will be used to assess behaviour based on a person's beliefs, perceptions, and behavioural control over various decisions (Ajzen, 1991). So, in the theory of planned behaviour, the higher the belief in individual attitudes, subjective norms, and behavioural control, the greater a person's behavioural intentions will be (Sashikala & Chitramani, 2018).

In theory, human behaviour can be guided by three types of considerations, namely, considerations regarding beliefs that might occur; second, beliefs about normative expectations from other people; and third, factors that can hinder behavioural performance (Ajzen, 2002). Beliefs about behaviour will be able to produce attitudes that can be favourable or even unfavourable towards the behaviour. As in beneficial behaviour, individuals with strong behavioural control can form well-planned behaviour. Individuals with good planning can easily achieve the expected goals and minimise failures (Ajzen, 2002). Meanwhile, an unfavourable behavioural context is shown through overconfident behaviour, namely behaviour that exaggerates one's abilities, so this behaviour is very high in the risks faced.

Investment Decisions

Investment is the process of purchasing assets from available resources to obtain added economic value in the future with great value. Some investors commit to their resources in short-term investments, and some in long-term investments. Short-term investments are generally equity that can be sold or converted into cash within a short period, namely between 3-12 months. Alternatively, in other words, management holds shares to get fast returns, and management plans to sell them when they provide high returns (Ahmad, 2020). Investment decisions relate to the assets that a company or investor will invest in. Meanwhile, investors invest to expect the maximum possible return and minimize risk (Rahman & Gan, 2020). Investors' decisions to invest in the stock exchange play an important role in determining market developments to influence market conditions (Xiang, 2014). Many factors influence the investment decision-making process, for example, cognitive and emotional weaknesses, limited rationality, financial knowledge, income level, and previous investment experience (Ahmad & Shah, 2022). Behavioural finance assumes that investment decisions are often irrational because any information received is imperfect (Bikhchandani et al., 1992). Investors with good financial literacy can assist in the investment decision-making process and help make unbiased decisions(van Rooij et al., 2011).

Financial Literacy

Huston, (2010) suggests that financial literacy can be divided into two main dimensions: understanding or knowledge related to personal finance and using it. According to Servon & Kaestner, (2008), financial literacy is a person's ability to understand and utilize financial concepts. Furthermore Lusardi & Mitchell, (2014) define *financial literacy* as using known information to increase financial perspective. Furthermore, financial literacy, or financial capability, is defined as achieving financial well-being through applying a certain level of financial understanding and carrying out the necessary financial behaviours (Xiao *et al.*, 2014). Furthermore, Ganesan *et al.*, (2020) define financial literacy as a person's ability to understand a financial product and also the ability to make decisions based on the knowledge they have.

Hassan Al-Tamimi & Anood Bin Kalli, (2009) They stated that someone with low financial literacy can make poor investment decisions and have poor financial practices. Likewise Awais *et al.*, (2016) said that individuals with much financial knowledge will have a higher interest in making investment decisions than individuals with low financial literacy. This is as stated by van Rooij *et al.*, (2011), that individuals with a low level of financial literacy, especially those who lack knowledge related to stocks and bonds, have a low interest in participating in the stock market. Financial literacy, embedded in stock market knowledge, is the main driver for individuals to participate in the stock market and share ownership (Mouna & Anis, 2017). This is coupled with the support of research conducted by Baker *et al.*, (2019), whose research conclusions suggest that individuals with high financial literacy and knowledge related to stocks and bonds will be highly interested in investing in the stock market. Likewise, the results of research conducted by Saputra *et al.*, (2021) state that individuals with high financial literacy can increase the individual's interest in investing. Apart from that, high financial literacy can minimize risks. This aligns with research conducted by (Patil & Bagodi, 2021). Based on this, the following hypothesis can be drawn in this research:
H1: There is a significant effect of Financial Literacy on investment decision
H2: There is a significant effect of Financial Literacy on unsystematic risk management

Unsystematic Risk Management

According to Finucane et al., (2000), risk implies a profit and loss function. However, many give the perception that risk is related to loss. Renn, (1998) emphasizes the importance of the human factor in the concept of risk because risk is related to how much investors are concerned about an event that will occur in the future. Furthermore Gärling et al., (2009) further explained that risk is an important part of making financial decisions, and the factors that influence it can be demographic and personality factors. Demographic factors can be a fundamental risk perception factor (Slovic, 1999). In general, risks can be divided into two categories: systematic risk and unsystematic risk. Systematic risk is called security risk, which the business community can systematically perceive. Most stock prices have been affected by this risk (Firer, C. ; Ross et al., 2008). Unsystematic risk occurs internally from the company itself and is not felt by other companies. Unsystematic risk can be eliminated by doing good portfolio management (Bello & Zakri, 2005). Therefore, to avoid or minimize risks, risk management is required to achieve economic value from these investment activities.

Risk management is determining the risks that will occur in investment activities and then appropriately handling these risks (Baker & Filbeck, 2015). Continue Baker & Filbeck, (2015) Risk management is important because it can reduce or increase risk depending on the investor's objectives and investment management. Further risk management, according to (Rosman & Rahman, 2015). In ensuring the right investment decisions, evaluating the economic benefits and analyzing the risks related to investment activities is necessary. All businesses involve risks, but finding the right balance between risks and rewards is difficult. Therefore, it is necessary to identify business risks and procedures for the quantity of the latest potential risks that will occur so that they can prevent bad decisions when investing (Merková & Drábek, 2015). The results of identifying and determining these crucial factors will form the basis for the analysis of the next stages of risk, which are called risk measurements (Merková

& Drábek, 2015). Risk management in an organization experiences a paradigm shift from a dangerous situation to a strategy for a particular business or business (Gupta, 2011). So that the risk is now no longer considered as a threat but as a potential opportunity.

Jorion, (2001) states that the success of an organization depends on risk management by providing sensitivity to various kinds of risks. Lam, (2001) states that risk management can reduce income volatilities, maximize shareholder value, and promote job security and financial security within the organization. Risk management is an optimal company investment allocation strategy by maximizing the expected target (Li & Wu, 2009). Research by Songling et al., (2018) suggests that high-risk management can make good investment decisions. Likewise, research conducted by Songling et al., (2018) shows that risk can be minimized with adequate investor knowledge so that it can provide high opportunities to make investments. Based on this, the hypothesis in this study can be formulated as follows:
H3: There is a significant influence of unsystematic risk management on investment decision. (Figure 1 research model). From the previous explanation, which explains the relationship between variables, namely, financial literacy can affect investment intentions, Financial Literacy can affect unsystematic risk management, and unsystematic risk management can affect investment intentions, the research flow can be described as follows.

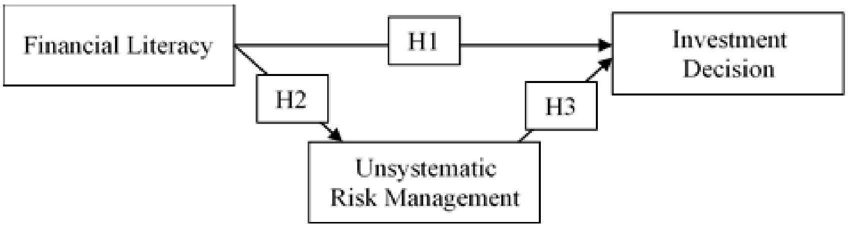

Figure 1. Research Model

3. Research Method

Types of research

This research is explanatory research, which explains the relationship between each variable, namely between the independent variable and the dependent variable or the relationship between variables. Variables in this research include financial literacy, unsystematic risk management, and investment decisions.

Data Type

This research uses primary data from respondents, namely investors registered in the investment gallery of the Muhammadiyah University of Ponorogo. The primary data in this research are respondents' responses from the variables financial literacy, unsystematic risk management, and investment decisions.

Method of collecting data

Data was collected by distributing questionnaires directly and asking respondents a list of questions. Questionnaires were distributed via Google Forms and sent to respondents. The results of the questionnaire filled in by respondents are automatically stored and documented so that confidentiality will be maintained. The questions asked are closed questions, namely questions whose answers are limited by the researcher. So, respondents can only answer questions based on opinion.

Sample

The sample in this research is investors registered in the investment gallery of Muhammadiyah University of Ponorogo. Sampling in this research refers to the Slovin formula to determine the number of research samples. Based on the Slovin formula calculation results, the number of samples in this study was 88 respondents. The sampling technique in this study was purposive, namely by using certain criteria to be included as a research sample. The criteria are 1) Students at the Muhammadiyah Ponorogo Faculty of Economics. 2) have been registered as an investor on the Indonesian Stock Exchange. Data analysis techniques are used to answer problem formulations or test hypotheses that have been formulated.

Variable Measurement

This research uses three variables: financial literacy, unsystematic risk management, and investment decisions. The measurement indicators for each variable are as follows. Financial literacy indicators consist of an easy understanding of financial information, the ability to manage finances well, ease of investing, and the ability to carry out investment analysis. Indicators of unsystematic risk management consist of diversifying shares, carefully assessing shares, carrying out action plans if the worst risk occurs, and paying attention to previous share values. Indicators of investment decisions consist of choosing safer investments, getting profits from investments made, determining risk tolerance from investment decisions made, and tending to sell risky shares to buy safer shares.

Analysis Techniques

Data analysis techniques are used to answer problem formulations or test hypotheses that have been formulated. Data processing in this research will use smartPLS 3 software. The analysis techniques used in this research are 1) Validity and reliability test and 2) Determination test analysis. 3) Test the hypothesis. And 4) Mediation test

4. Results and Discussion

Variable Description

Respondents' perceptions regarding the variables studied: financial literacy, unsystematic risk management, and investment decisions. This study uses a range criterion of 5. Therefore, the interpretation of the value is:

1. 1.00 to 1.80 = very low
2. 1.81 to 2.61 = low
3. 2.63 to 3.42 = moderate
4. 3.43 to 4.23 = high
5. 4.24 to 5.00 = very high

Based on the research results on each variable, the description is as follows:

Financial Literacy

Table 1. Description of Financial Literacy

Variable Indicator	Average	Criteria
Easy-to-understand financial information	3,88	high
Ability to manage finances well	4,11	high
Ease of investing	3,91	high
Ability to carry out investment analysis	3,92	high

Source: Processed Primary Data

Based on the results of the description of financial literacy in Table 1, investors who are members of the Muhammadiyah Ponorogo investment gallery already have good financial literacy. This is confirmed in one of the financial literacy indicators from the research results table above, showing the ability to manage finances well, shown by high criteria with an average of 4.11. Meanwhile, other indicators show high criteria. So, researchers can conclude that investors who are members of the investment gallery already have financial literacy and the ability to manage finances and investments.

Unsystematic Risk Management

Table 2. Description of Unsystematic risk management

Variable Indicator	Average	Criteria
Stock Diversivication	3,90	high
Be thorough in assessing shares	4,14	high
Take action if the worst risk will occur.	4,00	high
Pay attention to the previous share value.	4,10	high

Source: Processed Primary Data

The results of the unsystematic risk management description in Table 2 show that investors who are members of the Muhammadiyah Ponorogo investment gallery already have an understanding and ability to manage risk. This is confirmed by one of the unsystematic risk management indicators from the research results table above, which shows thoroughness in assessing shares with the highest score, 4.11, and is in the high category. Meanwhile, the indicator for the statement of diversifying shares has a score of 3.90 but is still within the high criteria. Thus, researchers can conclude that investors who are members of the investment gallery already understand and can manage unsystematic investment risks in investment activities.

Investment Decisions

Tabel 3. Description of investment decisions

Variable Indicator	Average	Criteria
Choose safer investments	4,05	high
Get a profit on the investment made	4,32	very high
Determine the risk tolerance of the investment decisions made	4,14	high
Tend to sell risky stocks to buy safer stocks	3,98	high

Source: Processed Primary Data

Based on the results of the description of investment decisions in Table 3, investors who are members of the Muhammadiyah Ponorogo investment gallery can already make investment decisions. This is confirmed in one of the investment decision indicators from the research results in the table above, getting a profit on the investment made, with very high criteria and an average of 4.32. Moreover, the lowest average of 3.98 indicates a statement tending to sell risky shares to buy safer shares. But still in the high category. Thus, researchers can conclude that investors who are members of the investment gallery can make investment decisions on the Indonesian Stock Exchange (BEI).

Analysis Techniques

Validity test

The questionnaire is considered valid if the questions asked can reveal problems using the questionnaire measuring instrument. According to (Ghozali, 2014), all constructs with reflection indicators produce a loading factor value > 0.70, which can be said to be valid. The results of the validity test can be seen in the table below:

Table 4. Validity Test

	LK	KI	URM
LK1	0.767		
LK2	0.791		
LK3	0.777		
LK4	0.771		
KI1		0.796	
KI2		0.824	

KI3	0.801	
KI4	0.709	
URM1		0.838
URM2		0.831
URM3		0.743
URM4		0.738

Source: SmartPLS 3.2.9 Output

Based on statistical tests, the validity test results presented in Table 1 above show that all components or indicators of each variable are said to be valid. Because the loading factor value is > 0.70

(Table 5 reliability test) This test can measure the consistency and sustainability of the measuring instruments used. It is reliable if the resulting composite reliability value for all the constructs above is >0.70. It can also be seen by looking at the composite reliability, which is much higher for all reflexive constructs than the Cronbach alpha value. More details can be seen in the following table:

Table 5. Reliability test

	Cronbach's Alpha	Composite Reliability
LK	0.781	0.859
KI	0.790	0.864
URM	0.799	0.868

Source: SmartPLS 3.2.9 Output

Based on statistical tests, the reliability test results presented in the table above show that the composite reliability value produced by all constructs is above 0.70. Alternatively, the composite reliability value is greater for all constructs with a Cronbach alpha value. Therefore, all variable statements in this study are considered reliable.

(table 6 Determination Test). The purpose of doing the R Square test is to see the contribution of the independent variable to the Dependent variable. The value of R Square close to the value of one indicates that the contribution of the independent variable to the dependent variable is getting bigger. More details, can be presented in the table below:

Table 6. Determination test

	R Square	R Square Adjusted
KI	0.616	0.607
URM	0.242	0.234

Source: SmartPLS 3.2.9 Output

Based on the results of the R Square test analysis presented in the table above, the magnitude of the influence of financial literacy and unsystematic risk management on investment decisions is 0.616 or 61.6%. The rest is influenced by other factors not included in this research variable. Meanwhile, the magnitude of the influence of unsystematic risk management on Investment Decisions is 0.242. This means that the contribution of unsystematic risk management to Investment Decisions is 24.2%. Moreover, the rest is influenced by factors not included in this research variable.

(Table 7 hypothesis test) The criteria in this test are if the P value is less than 0.05, then there is an influence of the independent variable on the dependent variable:

Table 7. Hypothesis test

	Original Sample (O)	T Statistics (|O/STDEV|)	P Values
LK -> KI	0.607	9.028	0.000
LK -> URM	0.492	5.282	0.000
URM -> KI	0.281	3.976	0.000

Source: SmartPLS 3.2.9 Output

Based on the hypothesis test shown in the table above shows an influence between Financial Literacy and Investment Decisions. This can be seen from the P Values 0.000 <0.05. It influences positively. It can be seen that the original sample is 0.607. Financial Literacy has a significant positive effect on investment decisions.

Furthermore, there is an influence between financial literacy and unsystematic risk management. This can be seen from the P Values 0.000 <0.05. Moreover, it influences positively; it can be seen that the original sample is 0.492, which shows a positive value. Financial literacy has a significant positive effect on unsystematic risk management. Moreover, there is an influence between unsystematic risk management and investment decisions. This can be seen from the P Values 0.000 <0.05. Moreover, it influences positively; it can be seen that the original sample is 0.281, which shows a positive value. It can be concluded that the strategy is unsystematic risk management and significant to Investment Decisions.

(Table 8 mediation test) The mediation test in Table 8 shows that the mediating variable, in this case, the unsystematic risk management strategy, can mediate the relationship between Financial Literacy and Investment Decisions. This can be seen from the P Values of 0.004, which is smaller than 0.05. It can be concluded that the unsystematic risk management strategy can mediate the influence of Financial Literacy on Investment Decisions.

Table 8. Mediation test

	Original Sample (O)	Standard Deviation (STDEV)	P Values
LK -> URM -> KI	0.139	0.048	0.004

Source: SmartPLS 3.2.9 Output

Discussion

Financial Literacy has a significant positive effect on Investment Decisions.

Financial literacy is shown through a general knowledge of finance, knowledge of savings, knowledge related to insurance, and knowledge related to investment can positively contribute to investment decisions. Investment decisions can be demonstrated through investment security, return on investment, buying safer stocks, and risk tolerance. (Mushinada, 2020) argues that to minimize risk in making financial decisions, it is necessary to base decisions on experience and intuition and gather relevant information to make better decisions.

Furthermore Shukla *et al.*, (2020) explain that investors' interest in investing is strongly influenced by information related to the world of investment, their experience, and their knowledge. Investors with adequate knowledge and skills will always behave rationally and will not be easily influenced by their souls or emotions, which can result in investment risk (Shah *et al.*, 2018). Baker *et al.*, (2019) in his research highlighted the effect of financial literacy on investor behavioural biases. The results show that financial literacy negatively influences behavioural biases; in this case, having adequate financial literacy can reduce behavioural biases, potentially leading to errors in making Investment Decisions. This can also be confirmed by research from Sabir *et al.*, (2019) that financial literacy can weaken investor behaviour bias. From the above opinion, Financial Literacy has an important role in increasing investment decisions. In addition, financial literacy can also reduce investor behaviour bias, which can hurt the making of investment decisions. This is in line with research conducted by (Kasoga, 2021; Ahmad & Shah, 2022) found that financial literacy can influence a person's interest in investing.

Financial Literacy has a significant effect on unsystematic risk management.

Financial literacy here is shown through a general knowledge of finance, savings, insurance, and investment, which positively impacts unsystematic risk management. Financial knowledge and knowledge in determining investment instruments is a guide in managing risk, especially in assessing the unsystematic risk of an investment. Financial Literacy is the most significant factor influencing an individual's ability to make financial (Thomas & Spataro, 2018). Mushinada, (2020) argues that to minimize risk in making financial decisions, it is necessary to base decisions on experience and intuition and collect relevant information to make better decisions.

Unsystematic risk management has a significant effect on Investment Decisions.

Unsystematic risk management is measured by diversification measures, carefully assessing investments, risk prevention action plans, and paying attention to historical footprints that can drive one's Investment Decisions. Investors understand risks based on their concerns and experiences while investing, so they are always careful in assessing every investment they make. Forlani & Mullins, (2000) explain risk related to the way individuals understand the level of uncertainty and possibility that occurs by taking certain actions. Therefore, risk prevention measures investors take are important to avoid failure in investing. Thus, the risk management carried out by investors greatly influences their decision-making (Sindhu *et al.*, 2014). This aligns with research conducted by (Ahmad & Shah, 2022) regarding understanding that investment risk can improve investment decision-making.

5. Conclusion

Financial literacy has a positive and significant effect on investment decisions. This means that financial literacy is one of the supporting factors for an investor in making investment decisions. In this case, the higher an investor's knowledge, the easier it will be to make an investment decision. Financial literacy has a positive and significant effect on unsystematic risk management. This means that with the support of financial knowledge, investors will easily manage their finances against any risks. Apart from that, the risks that occur in investments will be easily managed to avoid risks that could be detrimental. Unsystematic risk management has a positive and significant effect on investment decisions. This means that investors who can carry out risk management will easily determine investment opportunities without significant losses, making it easier for investors to make investment decisions.

This research contributes to financial literacy as an important factor for investors when carrying out investment activities. This can be seen from the results of this research, which found that financial literacy and unsystematic risk management can influence investment decisions. This shows that financial literacy and unsystematic risk management can guide investors in making investment decisions, especially in the capital market. Mwathi et al., (2017), financial literacy is used as a guide to evaluate an investment product to produce appropriate decisions regarding relevant funds. Furthermore, unsystematic risk management as a mediating variable can mediate the influence of financial literacy on investment decisions.

This shows that unsystematic risk management supported by financial literacy is important capital to minimize investment risks (Riawan, 2023).

This research certainly still needs to improve, both in terms of theory and the research results obtained. In particular, the square unsystematic risk management value for investment decisions is still quite low, namely 24%. This means there are still other factors that can influence investment decisions. Apart from that, the respondents targeted in this research did not require how long they had been investors, and the targeted respondents were students who, of course, from a psychological perspective, still had aggressive behaviour in making investment decisions.

References

Ahmad, M. (2020). Does underconfidence matter in short-term and long-term investment decisions? Evidence from an emerging market. *Management Decision*, *59*(3), 692–709. https://doi.org/10.1108/MD-07-2019-0972

Ahmad, M., & Shah, S. Z. A. (2022). Overconfidence heuristic-driven bias in investment decision-making and performance: mediating effects of risk perception and moderating effects of financial literacy. *Journal of Economic and Administrative Sciences*, *38*(1), 60–90. https://doi.org/10.1108/jeas-07-2020-0116

Ajzen, I. (1991). *The Theory of Planned Behavior*.

Ajzen, I. (2002). Perceived Behavioral Control , Self-Efficacy , Locus of Control , and the Theory of Planned Behavior1. *Journal OfApplied Social Psychology*, 665–683.

Antony, A., & Joseph, A. I. (2019). *Influence of Behavioural Factors Affecting Investment Decision — An AHP Analysis*. *December 2017*. https://doi.org/10.1177/0972622517738833

Awais, M., Fahad Laber, M., Rasheed, N., & Khursheed, A. (2016). International Journal of Economics and Financial Issues Impact of Financial Literacy and Investment Experience on Risk Tolerance and Investment Decisions: Empirical Evidence from Pakistan. *International Journal of Economics and Financial Issues*, *6*(1), 73–79. http:www.econjournals.com

Baker, H. K., & Filbeck, G. (2015). *Investment Risk Management*.

Baker, H. K., Kumar, S., Goyal, N., & Gaur, V. (2019). How financial literacy and demographic variables relate to behavioral biases. *Managerial Finance*, *45*(1), 124–146. https://doi.org/10.1108/MF-01-2018-0003

Bello, & Zakri. (2005). Idiosyncratic risk and mutual fund return. *The Journal of Business and Economic Studies*, *11*(2).

Bikhchandani, S., Hirshleife, D., & Welch, I. (1992). A Theory of Fads , Fashion , Custom , and Cultural Change as Informational Cascades. *Journal of Political Economy*, *100*(5), 992–1026.

Dhar, R., & Zhu, N. (2006). Up close and personal: Investor sophistication and the disposition effect. *Management Science*, *52*(5), 726–740. https://doi.org/10.1287/mnsc.1040.0473

Falahati, L., Sabri, M. F., & Paim, L. H. J. (2012). Assessment a model of financial satisfaction predictors: Examining the mediate effect of financial behaviour and financial strain. *World Applied Sciences Journal*, *20*(2), 190–197. https://doi.org/10.5829/idosi.wasj.2012.20.02.1832

Finucane, M. L., Alhakami, A., Slovic, P., & Johnson, S. M. (2000). The affect heuristic in judgments of risks and benefits. *Journal of Behavioral Decision Making*, *13*(1), 1–17. https://doi.org/10.1002/(SICI)1099-0771(200001/03)13:1<1::AID-BDM333>3.0.CO;2-S

Firer, C. ; Ross, S. A., Westerfield, R. W., & Jordan, B. D. (2008). *Fundamentals of Corporate Finance*.

Forlani, D., & Mullins, J. W. (2000). Perceived risks and choices in entrepreneurs' new venture decisions. *Journal of Business Venturing*, *15*(4), 305–322. https://doi.org/10.1016/S0883-9026(98)00017-2

Ganesan, Y., Allah Pitchay, A. Bin, & Mohd Nasser, M. A. (2020). Does intention influence the financial literacy of depositors of Islamic banking? A case of Malaysia. *International Journal of Social Economics*, *47*(5), 675–690. https://doi.org/10.1108/IJSE-01-2019-0011

Gärling, T., Kirchler, E., Lewis, A., & van Raaij, F. (2009). Psychology, Financial Decision Making, and

Financial Crises. *Psychological Science in the Public Interest, Supplement*, *10*(1), 1–47. https://doi.org/10.1177/1529100610378437

Ghozali, I. (2014). *Partial Least Squares (Konsep, Teknik dan Aplikasi SmartPLS 3,0)*. Universitas Diponegoro.

Gupta, P. K. (2011). Risk management in Indian companies: EWRM concerns and issues. *Journal of Risk Finance*, *12*(2), 121–139. https://doi.org/10.1108/15265941111112848

Hamza, N., & Arif, I. (2019). *Impact of Financial Literacy on Investment Decisions : The Mediating Effect of Big-Five Personality Traits Model*. *June*.

Hassan Al-Tamimi, H. A., & Anood Bin Kalli, A. (2009). Financial literacy and investment decisions of UAE investors. *Journal of Risk Finance*, *10*(5), 500–516. https://doi.org/10.1108/15265940911001402

Hoffmann, A. O. I., & Post, T. (2017). How return and risk experiences shape investor beliefs and preferences. *Accounting and Finance*, *57*(3), 759–788. https://doi.org/10.1111/acfi.12169

Huston, S. J. (2010). Measuring Financial Literacy. *Journal of Consumer Affairs*, *44*(2), 296–316. https://doi.org/10.1111/j.1745-6606.2010.01170.x

Jackson, J. (2010). Promoting energy efficiency investments with risk management decision tools. *Energy Policy*, *38*(8), 3865–3873. https://doi.org/10.1016/j.enpol.2010.03.006

Jorion, P. (2001). *alue at Risk: The New Benchmark for Managing Financial Risk* (2nd Editio). McGraw-Hil.

Junianto, Y., Kohardinata, C., & Silaswara, D. (2020). Financial Literacy Effect and Fintech in Investment Decision Making. *Primanomics: Jurnal Ekonomi & Bisnis*, *18*(3), 150–168.

Kasoga, P. S. (2021). Heuristic biases and investment decisions: multiple mediation mechanisms of risk tolerance and financial literacy—a survey at the Tanzania stock market. *Journal of Money and Business*, *1*(2), 102–116. https://doi.org/10.1108/jmb-10-2021-0037

Lam, J. (2001). *Enterprise Risk Management: From Incentives to Controls, 2nd Edition*.

Li, X., Miffre, J., Brooks, C., & O'Sullivan, N. (2008). Momentum profits and time-varying unsystematic risk. *Journal of Banking and Finance*, *32*(4), 541–558. https://doi.org/10.1016/j.jbankfin.2007.03.014

Li, X., & Wu, Z. (2008). Reputation entrenchment or risk minimization?: Early stop and investor-manager agency conflict in fund management. *Journal of Risk Finance*, *9*(2), 125–150. https://doi.org/10.1108/15265940810853904

Li, X., & Wu, Z. (2009). Corporate risk management and investment decisions. *Journal of Risk Finance*, *10*(2), 155–168. https://doi.org/10.1108/15265940910938233

Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, *52*(1), 5–44. https://doi.org/10.1257/jel.52.1.5

Merková, M., & Drábek, J. (2015). Use of Risk Analysis in Investment Measurement and Management. *Procedia Economics and Finance*, *34*(15), 656–662. https://doi.org/10.1016/s2212-5671(15)01682-2

Mouna, A., & Anis, J. (2017). Financial literacy in Tunisia: Its determinants and its implications on investment behavior. *Research in International Business and Finance*, *39*, 568–577. https://doi.org/10.1016/j.ribaf.2016.09.018

Mushinada, V. N. C. (2020). Are individual investors irrational or adaptive to market dynamics? *Journal of Behavioral and Experimental Finance*, *25*. https://doi.org/10.1016/j.jbef.2019.100243

Mwathi, A. W., Kubasu, A., & Akuno, R. (2017). *Effects of Financial Literacy on Personal Financial Decisions among Egerton University Employees , Nakuru*. *5*(3), 173–181. https://doi.org/10.11648/j.ijefm.20170503.16

Paquin, J. P., Gauthier, C., & Morin, P. P. (2016). The downside risk of project portfolios: The impact of capital investment projects and the value of project efficiency and project risk management programmes. *International Journal of Project Management*, *34*(8), 1460–1470. https://doi.org/10.1016/j.ijproman.2016.07.009

Patil, S., & Bagodi, V. (2021). "A study of factors affecting investment decisions in India: The KANO way." *Asia Pacific Management Review*, *26*(4), 197–214. https://doi.org/10.1016/j.apmrv.2021.02.004

Rahman, M., & Gan, S. S. (2020). Generation Y investment decision: an analysis using behavioural factors. *Managerial Finance*, *46*(8), 1023–1041. https://doi.org/10.1108/MF-10-2018-0534

Renn, O. (1998). Three decades of risk research : Accomplishments and new challenges. *Journal of Risk Research*, *1*(1), 49–71.

Riawan. (2023). *Peran Islamic Ethics Financial Behavior Dan Unsystematic Risk Management Dalam Investment Decision*. Universitas Islam Sultan Agung Semarang.

Rosman, R., & Rahman, A. R. A. (2015). The practice of IFSB guiding principles of risk management by Islamic banks. *The Eletronic Library*, *6*(2), 150–172.

Sabir, S. A., Mohammad, H. Bin, & Shahar, H. B. K. (2019). The role of overconfidence and past investment experience in herding behaviour with a moderating effect of financial literacy: Evidence from pakistan stock exchange. *Asian Economic and Financial Review*, *9*(4), 480–490. https://doi.org/10.18488/journal.aefr.2019.94.480.490

Saputra, R. F., Suyanto, S., & Japlani, A. (2021). Pengaruh Literasi Keuangan Terhadap Minat Berinvestasi di Pasar Modal Dengan Perkembangan Teknologi Digital Sebagai Variabel Moderasi (Studi Empiris Mahasiswa Akuntansi Universitas Muhammadiyah Metro). *Jurnal Akuntansi AKTIVA*, *2*(2), 196–203. http://scholar.ummetro.ac.id/index.php/aktiva/article/view/1543

Sashikala, V., & Chitramani, P. (2018). The Impact of Behavioural Factors on Investment Intention of Equity Investors. *Asian Journal of Management.*, *09*(01). https://doi.org/10.5958/2321-5763.2018.00028.8

Sathiyamurthi, K., Devi, K., & Raj, A. N. (2021). Materials Today : Proceedings Computational analysis and intelligence for mediating effect of investment knowledge on investment intention and investment behaviors. *Materials Today: Proceedings*, *xxxx*, 1–5. https://doi.org/10.1016/j.matpr.2021.01.062

Servon, L. J., & Kaestner, R. (2008). Consumer financial literacy and the impact of online banking on the financial behavior of lower-income bank customers. *Journal of Consumer Affairs*, *42*(2), 271–305. https://doi.org/10.1111/j.1745-6606.2008.00108.x

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

Shukla, A., Rushdi, N. J., & Katiyar, R. C. (2020). Impact of behavioral biases on investment decisions 'a systematic review.' *International Journal of Management*, *11*(4), 68–76. https://doi.org/10.34218/IJM.11.4.2020.009

Sindhu, R., Jandail, R. R. S., & Kumar, R. (2014). A Novel Approach for Sentiment Analysis and Opinion Mining. *International Journal of Emerging Technology and Advanced Engineering*, *4*(4), 522–527.

Slovic, P. (1999). Trust, emotion, sex, politics and science: Surveying the risk-assessment battlefield. *The Perception of Risk*, *19*(4), 390–412. https://doi.org/10.1111/j.1539-6924.1999.tb00439.x

Songling, Y., Ishtiaq, M., & Anwar, M. (2018). Enterprise Risk Management Practices and Firm Performance, the Mediating Role of Competitive Advantage and the Moderating Role of Financial Literacy. *Journal of Risk and Financial Management*, *11*(3), 35. https://doi.org/10.3390/jrfm11030035

Thomas, A., & Spataro, L. (2018). Financial Literacy, Human Capital and Stock Market Participation in Europe. In *Journal of Family and Economic Issues* (Vol. 39, Issue 4). https://doi.org/10.1007/s10834-018-9576-5

van Rooij, M., Lusardi, A., & Alessie, R. (2011). Financial literacy and stock market participation. *Journal of Financial Economics*, *101*(2), 449–472. https://doi.org/10.1016/j.jfineco.2011.03.006

Widiyastuti, A., & Nashirudin, M. (2022). Faktor Penyebab Rendahnya Minat Mahasiswa Untuk Berinvestasi. *Jurnal Justisia Ekonomika: Magister Hukum Ekonomi Syariah*, *6*(1). https://doi.org/10.30651/justeko.v6i1.13331

Xiang, C. Y. (2014). The Influence of Behavioral Factors in Making Investment Decisions and Performance: Study on Investors of Colombo Stock Exchange, Sri Lanka. *Asian Journal of Finance & Accounting, 6*(1).

Xiao, J. J., Chen, C., & Chen, F. (2014). Consumer financial capability and financial satisfaction. *Social Indicators Research*, *118*(1), 415–432. https://doi.org/10.1007/s11205-013-0414-8