Indonesian Journal of Business Analytics (IJBA)
Vol.3, No.4, 2023: 1363-1376

Analysis of Factors that Influence Investment Decisions with Financial Literacy as a Moderating Variable

Tia Mahrurotul Fikriyah[1], Dwi Suhartini[2]*
Universitas Pembangunan Nasional "Veteran" Jawa Timur
Corresponding Author: Dwi Suhartini dwisuhartini.ak@upnjatim.ac.id

ARTICLEINFO

Keywords: Investment Decision, Financial Literacy, Technical Analysis, Fundamental Analysis

Received : 7, June
Revised : 11, July
Accepted: 18, August

ABSTRACT

Investment is an important driving factor in a country's economic growth. However, in making investment decisions, factors such as fundamental analysis, technical analysis, psychological factors, and financial literacy can influence the results of investment decisions. Therefore, this study aims to analyze these factors and their relationship with investment decisions. This study uses a quantitative method with a descriptive approach. The research subjects were students of the East Java "Veteran" National Development University. Data is collected through a questionnaire that measures the level of influence of these factors on investment decisions, with financial literacy as a moderating variable. The results show that fundamental analysis has limitations because it depends on limited data. Technical analysis also has limitations because it relies on limited historical data and is vulnerable to sudden market changes. Psychological factors, such as self-confidence and risk tolerance, also influence investment decisions. However, financial literacy has only a limited impact on moderating the relationship between these factors and investment decisions. In making investment decisions, factors such as fundamental analysis, technical analysis, and psychological factors play an important role. Although financial literacy can assist in understanding basic financial concepts, its influence on these factors is limited. Therefore, increasing financial literacy among students and the millennial generation is expected to increase their understanding of managing risk and making wiser investment decisions.

INTRODUCTION

DOI: https://doi.org/10.55927/ijba.v3i4.5200
ISSN-E: 2808-0718
https://journal.yp3a.org/index.php/ijba

Investment is a tool as well as an important driving factor for a country's economic growth. Investment is urgently needed in developing countries and plays an important role in accelerating development because it is a vehicle for increasing income and employment growth, improving technology, and socio-economic development (Mainita & Soleh, 2019). The investment instrument is the choice of assets to invest according to ability and needs. Investment instruments can be in the form of deposits, mutual funds, bonds, stocks, property and gold. Based on the type of investment is categorized into two, namely investment in the form of real assets and financial assets. Real assets in the form of land, houses and gold. Financial assets themselves are intangible assets such as stocks, bonds, mutual funds and deposits (Boloș et al., 2021). Since 2021 the number of capital market investors has increased by 92.99% from 3,880,753 at the end of 2020 to 7,489,337 at the end of 2021. This increasing trend has been seen since 2019 when there were still 2,484,354 investors. The dominance of local investors can be seen from the ownership of each capital market investment instrument, including shares and other securities, which are documented in the KSEI system. In terms of the number of investors, financial sector shares are in first place with 939 thousand (key.co.id, 2022a). Stock investors are dominated by investors under the age of 40, namely Gen Z and millennials, with 81.64% with an asset value of IDR 144.07 trillion. As many as 60.45% of investors work as private employees, civil servants, teachers and students, with asset values reaching IDR 358.53 trillion. Demographic data shows that stock investors are still concentrated on the island of Java, namely 69.59%, including 13.97% of investors who are domiciled in DKI Jakarta with asset values reaching Rp. 3,772.32 trillion (ksei.co.id, 2022b).

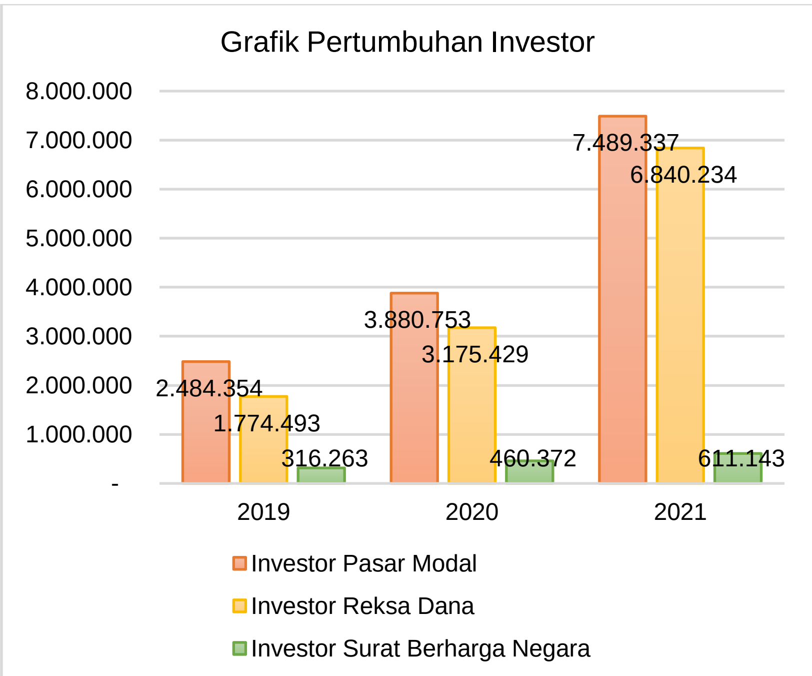

Figure 1. Graph of Investor Growth
Source:www.ksei.co.id

The achievement of local investor growth is certainly a success for the Self Regulatory Organization (SRO) in developing the Indonesian Capital Market. Indonesia Stock Exchange (IDX) As a sales manager for Indonesian securities, it continues to try to increase public investment in the capital market (Tanusdjaja, 2018). Growth in the number of investors must be accompanied by quality. The quality of investors can be seen by their analytical ability to make relevant decisions. Analysis of decision-making by investors requires relevant information to determine investment choices (Pahlevi & Oktaviani, 2018). Financial theory assumes that investors are rational in making decisions based on profit maximization. The essence of traditional finance is the Efficient Markets Hypothesis (EMH) which assumes that all information is provided to all investors without charge, resulting in stock prices always reflecting their intrinsic value and fairness (Fama, 1970) (Abul, 2019). When all investors behave rationally, the capital market which is a place to invest is in strong form efficient market conditions. These conditions resulted in all prices circulating in the capital market, reflecting all available information. The faster information circulates, the faster prices are formed in the capital market (Addinpujoartanto & Darmawan, 2020a).

However, recent research shows that investors do not always behave rationally and that there are psychological factors that influence investment decision-making. Psychological factors such as emotions, perceived risk, and cognitive biases can influence investors' evaluation of the risk and return on investment (Shefrin & Statman, 1985). In addition, psychological factors can also affect investment decisions through risk perception, where investors tend to respond more sensitively to losses than potential gains (Kahneman and Tversky, 1979).

In addition to psychological factors, the level of financial literacy also has an important role in limiting investor behavior and being a controlling tool in making investment decisions. Financial literacy refers to individual knowledge, understanding, and skills in managing finances and making informed investment decisions (Atkinson & Messy, 2014).

In the context of the Indonesian capital market, the level of financial literacy is still low. According to the Financial Services Authority (OJK), the level of financial literacy in the Indonesian capital market in 2020 only reached 4.9% (OJK, 2020). This shows that most investors, especially the millennial generation, have low financial literacy. Under these conditions, investors tend to rely on sources of information that are less reliable, such as recommendations from friends or social media, which can influence irrational investment decision-making (Santoso et al., 2022).

To increase financial awareness and literacy, many institutions and communities, including the Creative Economy Agency (BEKraf), Bank Indonesia, and educational institutions, are trying to increase public financial understanding, especially the millennial generation, through financial counseling and training. Increased financial literacy is expected to assist investors in analyzing information objectively, recognizing psychological factors that influence decision-making, and making investment decisions that are smarter and based on good understanding.

THEORETICAL REVIEW

Behaviour Finance

Behavior Finance is a research field that applies psychological theory to financial models to explain market anomalies (Ramadhan et al., 2021). Behavioral finance reaches out more broadly as a social science including psychology and sociology. Behavioral finance contradicts the efficient market theory which states that investors act rationally, while behavioral finance explains that investors can act irrationally when making decisions López-Cabarcos et al., (2020).

Behavioral finance provides the idea that some financial phenomena can be understood using a model in which some decision-making factors are not fully rational due to the presence of psychological factors or psychological biases, such as risk perception, overconfidence, and herding Anggia et al. (2022). Investors' psychological biases cannot be simply concluded. Each investor has different psychological and sociological conditions, especially in the millennial age group who are more sensitive to psychological aspects.

Signalling Theory

The incubation of Signaling theory stems from Spence's (1973) contribution to labor economics, where he accounted for "information asymmetries" into an economic model of decision-making Bergh et al. (2014). Due to the fact that strategic decisions are often characterized by information asymmetries between firms and their stakeholders Bergh et al., (2014), the theory seems to hold considerable promise for corporate storytelling for branding research. The theory is focused on the deliberate communication of positive information in an effort to convey positive organizational attributes, which demonstrate invisible underlying qualities and can be a powerful expression of organizational as well as individual behavior Moratis, (2018).

Signal theory explains management's perception of the company's future growth, which will affect the response of potential investors to the company. The signal is in the form of information that explains management's efforts to realize the owner's wishes. This information is considered an important indicator for investors and business people in making investment decisions. The existence of asymmetric information triggers signals to investors or the public through management policies to be very important. It is hoped that the signal will provide information for investors about how they view the company's prospects. One type of information issued by the company that can be a signal for parties outside the company, especially for investors, is the company's annual report. Information disclosed in the annual report can be in the form of accounting information, namely information relating to financial statements and non-accounting information, namely information that is not related to financial statements.

Investment Decision

Investment Decision is a policy taken to allocate funds owned in an asset in order to obtain future profits. Investment decisions can also be interpreted as a person's determination in allocating their funds into forms of investment that will bring future profits Aristiwati & Hidayatullah, (2021). According to Ramdani, (2018) investment decisions have a long-term time dimension, so that the decisions taken must be considered properly, because they have long-term consequences as well. Such investment decisions are often referred to as capital budgeting, namely the entire planning and decision-making process regarding the expenditure of funds with a period of return of these funds of more than one year or long-term.

Financial Literacy

Financial literacy describes the ability of an individual to address financial issues appropriately and successfully. In general, financial literacy addresses a person's income, its source and the effective and efficient use of his income, spending income by making confident decisions about savings or savings according to the situation. Financial literacy is the ability to understand, analyze and manage finances to make the right financial decisions to avoid financial problems (Gunawan et al., 2020).

The Organization for Economic Co-operation and Development (OECD) defines financial literacy as a combination of awareness, knowledge, skills, attitudes and behaviors required to make sound financial decisions and ultimately achieve individual well-being. Financial literacy helps individuals to increase their level of understanding of financial matters which enables them to process financial information and make decisions regarding personal finance.

METHODOLOGY

In this study, a quantitative research method was used based on the philosophy of positivism. This method is used to test research on certain populations or samples by collecting data using research instruments and analyzing data that is quantitative/statistical (Sugiyono, 2019). The thought process approach used in this study is descriptive. Descriptive research aims to analyze the influence of one variable on other variables or how a variable affects other variables. The data analyzed is in the form of numbers derived from respondents' answers in the questionnaire given by the researcher.

The object of this research includes fundamental analysis, technical analysis, psychological factors, investment decisions, and financial literacy. Fundamental analysis is a method used to analyze company activities and predict future economic situations based on company financial reports (Agustina, 2021).

Technical analysis is the study of market behavior which involves evaluating and predicting future price trends based on charts, patterns and technical indicators (Agustina, 2021). Psychological factors include emotional aspects, risk perceptions, and cognitive biases that can affect investment decision-making (Shefrin & Statman, 2000). Investment decisions refer to decisions taken by investors in choosing the right investment instrument (Sari, 2022). Financial literacy refers to individual knowledge, understanding, and skills in managing finances and making informed investment decisions (Atkinson & Messy, 2014). The subjects of this study were students of the East Java "Veteran" National Development University. Students were chosen as research subjects because they are a group that represents the millennial generation and has the potential to become investors in the future (Salsya Bani & Dewi, 2021).

RESULTS

East Java "Veteran" National Development University is one of the leading public universities in Indonesia which is located on Jalan Raya Rungkut Madya, Gunung Anyar, Surabaya. State universities which are often abbreviated as UPN "Veteran" East Java or UPN V JT have been established since July 5, 1959. UPN "Veteran" East Java was founded by veterans of the war for independence who became important figures behind the struggle against colonialism before finally becoming independent.

Operationally, the East Java Branch of UPN Veteran was under the auspices of the Education and Housing Welfare Foundation in 2007. Over time, the Ministry of Defense projects the East Java UPN Veteran to become a state university through the developments and progress that has been achieved. Finally, UPN Veteran East Java was officially legalized as a state university on October 6, 2014, through the signing of an inscription by President Susilo Bambang Yudhoyono who was serving at the time.

UPN Veteran East Java is one of the universities in Indonesia that is officially ISO 9001-2008 certified in the field of Quality Management Systems. Then UPN Veteran East Java has a webometrics ranking of 8,338 internationally and is ranked 78th nationally. In addition, the university, which was founded in 1959, is included in the 58 best universities that carry out Quality Assurance according to the Directorate General of Higher Education. Another achievement is that UPN V JT succeeded in being included as 5 leading universities in the East Java Kopertis VII region in the fields of governance, research and community service and student affairs.

Research Descriptive

Fundamental Analysis

Based on the research results it can be seen that the majority of respondents chose the answer "agree" which is equal to 60.48%, followed by "strongly agree" which amounted to 27.03%, then followed by "disagree" amounted to 11.03%, followed by "disagree" amounted to 1.13% and the remaining "strongly disagree" amounted to 0.12% in the Fundamental Analysis variable (X1). This illustrates that many respondents may have high confidence and trust in the effectiveness of fundamental analysis in predicting stock price movements. They may have seen empirical evidence or personal experience that shows fundamental analysis works well.

Respondents who have an educational background or higher knowledge of fundamental analysis may tend to understand and appreciate the importance of fundamental analysis in making investment decisions. This can make them tend to agree and strongly agree with statements related to fundamental analysis.

Technical Analysis

Based on the research results, it can be seen that the majority of respondents' responses chose the answer "agree" 68%, followed by "strongly agree" by 16.73%, then followed by "disagree" by 13.58%, then followed by "disagree" by 1.21% and the rest followed by "strongly disagree" by 0.48% on the Technical Analysis variable (X2). This illustrates that many respondents may have had positive experiences or success in using technical analysis before. They may have noticed that technical analysis helps them identify strong trends, significant levels of support and resistance, and profitable overbought and oversold situations.

Respondents who tend to agree and strongly agree with answers may have a strong belief that technical analysis can help them predict the direction of stock price movements. They believe that technical patterns and indicators can provide reliable signals for profitable investment decisions

Psychological Factors

Based on the results of the study it can be seen that more respondents chose the answer "agree" 34.36%, followed by "disagree" by 31.45%, then followed by "disagree" by 16.36%, then followed by "strongly agree" by 10.55% and the rest by "strongly disagree" by 7.27% on the Psychological Factor variable (X3). This illustrates that some respondents may have a high level of confidence in making investment decisions, which can lead to an "agree" answer related to overconfidence. However, when asked about risk tolerance, they may be more inclined to answer "disagree" because they are more careful in dealing with risks and more sensitive to possible losses.

Financial Literacy

Based on Table 4.5, it can be seen that more respondents chose the answer "agree" 64%, followed by "disagree" by 17.64%, then followed by "strongly agree" by 14%, then followed by "disagree" by 2.18% and rest followed by "strongly disagree" by 2.18% on the variable Financial Literacy (Z). This illustrates that respondents have different levels of knowledge and understanding related to financial concepts and practices. Some respondents may feel quite confident about their financial knowledge and feel "agree" about financial literacy. However, they may realize that there are aspects that still need to be improved in their understanding, so they answer "disagree" to several statements.

Investment Decision

Based on the research results, it can be seen that more respondents chose the answer "agree" 56.36%, followed by "strongly agree" by 21.82%, then followed by "disagree" by 18.18%, then followed by "strongly disagree" by 2% and the rest by "disagree" by 1.64% on the Investment Decision variable (Y). This illustrates that many respondents may feel optimistic and believe that investment can provide good returns. They feel "agreed" that the investment can provide a profitable return. When they consider the potential for greater returns, they then "absolutely agree" that investment decisions can yield highly profitable returns.

Data Analysis

The Effect of Fundamental Analysis on Investment Decisions by investors

The findings of this study indicate that Fundamental Analysis has no significant effect on Investment Decisions. Research conducted by (Putra & Elisabet, 2022) also showed similar results, namely that there was no effect of fundamental analysis on investment decision-making. Investors, especially millennial investors, tend not to rely on fundamental analysis in making investment decisions.

The concept of market efficiency also plays a role in determining the effect of Fundamental Analysis on investment decisions. Empirical studies conducted by (Fama, 1970) and (Malkiel, 2003) support the concept of market efficiency and show that it is difficult for investors to beat the market through fundamental analysis.

Fundamental analysis has limitations that affect its effect on investment decisions. These limitations include data limitations and limited information available to the public, such as company financial reports. In addition, non-fundamental factors such as market sentiment, market trends, and investor psychological factors can also influence investment decisions. This is consistent with the findings of previous research conducted by (Putra & Elisabet, 2022) which shows that fundamental analysis has no significant effect on investment decisions for millennial investors in Blitar.

However, there are still other studies that fundamental analysis use ratios such as EPS, DER, ROA, and ROE, and consider company internal and external factors such as performance, business competitors, industry, and market information.

The Influence of Technical Analysis on Investment Decisions by investors

The research results show that the Technical Analysis has no significant effect on Investment Decisions. Previous research conducted by (Arba'i, 2018) also supports this finding, that technical analysis has no significant influence on investment decision-making. Signaling Theory, which is part of technical analysis, explains that financial report announcements can influence market behavior. According to (Monalisa, 2021), financial information disclosed in financial reports can be considered as a signal by market participants regarding future investment prospects. However, investment decisions do not completely depend on this factor.

Technical Analysis is used to predict future price movements based on historical price movements. However, several studies have shown that investment decisions based on technical analysis can be influenced by cognitive biases and irrational human behavior. In this context, the ineffectiveness of Technical Analysis can be explained by the irregularity and uncertainty in market behavior which does not always follow clear technical patterns (Muis, 2021). Technical Analysis has limitations that need to be considered. First, this analysis relies on limited historical data and can be affected by extreme market volatility or sudden changes in fundamentals. These limitations may reduce the accuracy and predictability of Technical Analysis in the short term. In addition, this analysis is also subjective due to individual interpretations of certain patterns and indicators (Muis, 2021).

Research (Fauziah et al., 2020) shows that fundamental factors and technical factors simultaneously affect stock prices. However, technical analysis is used to predict price movements using charts and historical data, while fundamental analysis is used to calculate the intrinsic value of stocks based on company financial data (Zaimsyah, 2019). Fundamental analysis is generally more suitable for making long-term decisions and assessing the condition of issuers' fundamentals, while technical analysis is more focused on future price movements.

Influence of Psychological Factors on Investment Decisions by investors

The results of the study show that psychological factors have no significant effect on investment decisions. Traditional economic theory and research (Putra & Elisabet, 2022) support this finding, that psychological factors do not have a significant influence on investment decision-making. In-depth research shows that investors who have adequate knowledge and wisdom can overcome the impact of psychological factors in their investment decision-making. Psychological factors tend to become less significant when investors have developed the ability to manage emotions and make decisions based on objective information.

Market efficiency theory also supports this explanation. Market efficiency dictates that asset prices reflect all reasonably available information. In this context, research that supports market efficiency shows that psychological factors do not have a significant influence on investment decisions that generate sustainable profits. Research (Landing et al., 2021) shows that financial literacy, financial behavior, and income levels simultaneously have a significant effect on investment decisions. Several studies have shown a relationship between psychological factors, such as overconfidence or risk tolerance, and investment decisions. However, some studies find that the influence of psychological factors on investment decisions is not consistent or significant in the long term.

However, in reality, an investor is often influenced by psychological factors in making investment decisions, and this can lead to mistakes. Investment decisions are not always based on rational considerations alone but are also influenced by irrational aspects related to psychological factors, which are better known as Behavioral Finance / Behavioral Biases / Psychological Biases (Candy & Vincent, 2021).

The Effect of Fundamental Analysis on Moderated Investment Decisions Literasi Investor finance

The results of the research show that Financial Literacy is not able to moderate the relationship between Fundamental Analysis and Investment Decisions. Financial Literacy is an individual's ability to understand financial concepts and use that knowledge in making financial decisions. Fundamental Analysis, on the other hand, is an approach to evaluating the value of an investment based on the company's fundamental factors. Financial Literacy is unable to moderate this relationship due to the influence of incomplete information in fundamental analysis (Zaimsyah, 2019).

Fundamental Analysis requires access to complete and accurate information about the company being analyzed. However, the information available may be incomplete or inaccurate, which can result in errors in fundamental analysis and sub-optimal investment decisions. In this case, Financial Literacy cannot moderate the relationship between Fundamental Analysis and Investment Decisions (Zaimsyah, 2019). Investor behavior can be influenced by psychological factors. Factors such as subjectivity, emotion, and other psychological factors can influence investor behavior in investing and the results achieved. However, research (Aristiwati & Hidayatullah, 2021) shows that psychological factors are not significant in moderating the relationship between Financial Literacy and Investment Decisions.

There are differences of opinion in the literature. (Alaaraj & Bakri, 2020) argues that Financial Literacy can strengthen investment decisions by applying fundamental analysis and technical analysis. However, research that supports these findings is not mentioned in this summary.

The Effect of Moderated Technical Analysis on Investment Decisions Literasi Investor finance

The results of the study show that Financial Literacy is not able to moderate the relationship between Technical Analysis and Investment Decisions. Financial literacy usually focuses on understanding basic financial concepts and financial products, while technical analysis involves understanding price patterns and technical indicators in predicting price movements (Addinpujoartanto & Darmawan, 2020b).

Investors who have a high level of financial literacy may become overconfident in their ability to analyze technical data and make sound investment decisions. This excess trust can affect investors psychologically and result in losses (Addinpujoartanto & Darmawan, 2020b). Although financial literacy can increase investors' understanding of financial concepts, they are still vulnerable to heuristics and cognitive biases that can influence investment decisions (Addinpujoartanto & Darmawan, 2020b).

Financial literacy may help investors understand basic financial concepts, but they may not have sufficient knowledge of technical analysis to use it effectively in making investment decisions. In addition, other factors influence investment decisions, such as risk preferences, investment objectives, and market conditions, so financial literacy is unable to moderate the relationship between technical analysis and investment decisions (Addinpujoartanto & Darmawan, 2020b). Research conducted by (Fauziah et al., 2020) shows that high financial literacy can make a major contribution to individual financial well-being and perform better in choosing investment portfolios. However, the definition of financial literacy can vary depending on the individual or group observed, so the instrument for measuring financial literacy needs to be updated to make it more relevant (Fauziah et al., 2020). The opinion (Alaaraj & Bakri, 2020) which states that financial literacy can strengthen investment decisions with fundamental analysis and technical analysis is not in line with the findings in this study

Influence of Psychological Factors on Moderated Investment Decisions Literasi Investor finance

The results of the study show that Financial Literacy is not able to moderate the relationship between Psychological Factors and Investment Decisions. Financial literacy is related to an understanding of financial concepts and financial products, while psychological factors in making investment decisions involve more complex and personal psychological aspects (Azizah, 2020). Psychological factors such as emotions and cognitive biases can affect the way individuals interpret financial information and make investment decisions. Even if someone has a high level of financial literacy, they are still susceptible to this bias, which can result in sub-optimal investment decisions (Azizah, 2020). Psychological factors in making investment decisions are influenced by personal context and individual experience. High financial literacy may not effectively moderate this psychological factor, because emotions and cognitive biases have strong power in influencing investor behavior (Calderon & Tekçe, 2018).

Research by (Calderon and Tekçe, 2018) found that there was no significant effect between financial literacy and psychological factors on investment decisions for retail investors. This research shows that financial literacy might help reduce the tendency of retail investors to make bad investment decisions, but psychological factors still influence investment decisions (Calderon & Tekçe, 2018). Opinion (Wendy, 2021), which states that financial literacy can be a moderator that reduces psychological biases in making investment decisions is not in line with the results of this study.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the research that has been done, it can be concluded several things as follows:

1. Fundamental analysis has limitations that can affect its effect on investment decisions. Fundamental Analysis relies on limited data and information available to the public. This limitation makes Fundamental Analysis less able to accurately anticipate stock price movements.
2. Technical Analysis relies on limited historical data and is susceptible to extreme market volatility or sudden changes in fundamentals. Thus, Technical Analysis which focuses on historical patterns and trends is considered not to provide an advantage in generating consistent returns that exceed the market.
3. Investors who have sufficient knowledge and experience in finance tend to be better able to deal with psychological factors that can influence their investment decisions. In this case, psychological factors may become less significant because

investors have developed the ability to manage emotions and avoid irrational behavior.

4. Financial literacy has only a limited impact on moderating the relationship between Fundamental Analysis and Investment Decisions. Fundamental analysis also requires access to complete and accurate information about the company being analyzed. However, the information available may be incomplete or inaccurate, which can result in errors in fundamental analysis and sub-optimal investment decisions.
5. Technical analysis involves understanding price patterns and technical indicators used to predict price movements in the market. While financial literacy may help investors understand basic financial concepts, they may not have sufficient knowledge of technical analysis to use it effectively in making investment decisions.
6. Psychological factors in making investment decisions are often influenced by personal context and individual experience. Each individual has a unique background, risk tolerance and preferences, which can influence how they interpret financial information and make investment decisions. High financial literacy may not effectively moderate this psychological factor.

Suggestions for further research are to conduct a more in-depth fundamental analysis involving more specific financial ratio analysis and management quality assessment. In addition, it is important to consider the use of more diverse and relevant technical indicators in technical analysis. Furthermore, research can involve qualitative research methods to understand psychological factors that influence investment decisions, such as investor behavior and cognitive biases. In the context of financial literacy, it is recommended to use more detailed measurement instruments and consider the influence of certain dimensions of financial literacy. Furthermore, using a qualitative approach can help understand the interactions between technical analysis, financial literacy, and investment decisions. Finally, the development of financial literacy measurement instruments that focus on psychological aspects can provide a better understanding of the effect of financial literacy on psychological factors and investment decisions.

FURTHER STUDY

The recommendation for the next study is to analyze how the model developed through this research, research can involve qualitative research methods to understand psychological factors that influence investment decisions, such as investor behavior and cognitive biases. In the context of financial literacy, it is recommended to use more detailed measurement instruments and consider the influence of certain dimensions of financial literacy.

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