International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

Original Research

Investigating Various Levels of Financial Literacy with Behavioral Trends of Investors

Alireza Azarberahman[1]
Department of Accounting, Shandiz Institute of Higher Education, Mashhad, Iran

Ali Lalbar, Malihe Tohidinia
Department of Accounting & Finance, Islamic Azad University, Arak Branch, Arak, Iran

Zahra Ghorbanpoor
Department of Accounting, Shandiz Institute of Higher Education, Mashhad, Iran

Received 12 February 2024 Revised 4 April 2024 Accepted 16 April 2024

Abstract

Understanding the factors that contribute to decreased financial literacy and increased behavioral biases can suggest solutions for risk management and improving decision-making processes. On the other hand, investors make financial decisions based on their levels of financial literacy and behavioral biases. The main goal of this research is to examine the various levels of financial literacy with investors' behavioral biases, and understanding this relationship can help us recommend the best strategies to encourage investors to make better-informed decisions. The research population includes all investors in the Tehran Stock Exchange. A sample, calculated using Cochran's formula, ultimately collected 390 questionnaires manually and online, and necessary pretests were conducted to confirm the validity and reliability **.**Descriptive statistics, including the demographic characteristics of respondents and the frequency of responses to each question, were performed in this study. Then, structural equation modeling was used to test hypotheses. The results of hypothesis testing showed that professional financial literacy has an inverse effect on overconfidence behavioral bias. It was also found that professional financial literacy has a significantly positive effect on risk tolerance. Finally, it was determined that there is a significant negative relationship between professional financial literacy and self-documentary and risk aversion biases. On the other hand, it was revealed that investors with low levels of financial literacy have a positive relationship with the mentioned behavioral biases. Based on the research results, it can be claimed that as the level of financial literacy decreases among investors, they will become more involved in behavioral biases.

Keywords: Behavioral biases, financial literacy, investors.

[1] *Corresponding author's Email: a_berahman@yahoo.com*

Introduction

Investors, in their financial decision-making, are influenced by behavioral factors. These factors include behavioral biases such as overconfidence, emotional fluctuations, high self-confidence, a tendency to gather information from unknown sources, etc. For example, for investors with overconfidence, positive news may intensify their overconfidence and result in financial decision-making errors. Therefore, in financial decision-making, it is necessary for investors to be aware of their behavioral factors and try to control their impact. The term "bias" refers to deviation from correct and optimal decision-making. In summary, behavioral biases are defined as systematic errors in judgment (Xiao et al., 2022). To provide a proper analysis of investor behavior, analysts need to identify all influential factors. Identifying these factors helps analysts make more accurate efforts to attract investors in the stock market and, in addition to paying attention to other financial and economic individual variables, consider occupational and educational factors as important and influential variables on investors' decisions. Financial planners can also use the findings of this research in developing solutions and allocating financial resources. Today, it is globally accepted that financial literacy is a crucial component of financial stability and economic development. Considering this importance, many institutions (such as the Jump$tart Coalition for Personal Financial Literacy and the Center for Financial Literacy Global Financial Literacy Excellence Center) study financial literacy on a national and global scale. Most of these studies aim to enhance individuals' financial knowledge (Arianti, 2018).

Some researchers have conducted studies in search of a meaningful framework for classifying behavioral biases. Some authors refer to behavioral tendencies as heuristics, while others label them as beliefs and preferences. Some researchers classify biases into cognitive and emotional categories, and it seems that this classification could be useful. So far, a cohesive theory regarding the causes of behavioral biases has not been presented. However, financial research relies on a broad set of evidence confirming the suboptimal financial decisions of individuals in various conditions (Ghalmegh et al., 2019).

Although classifying biases seems useful, its practical applications in real-life situations may not be as important as it appears. Behavioral biases include overconfidence, representativeness, reliance, adjustment, conservatism, familiarity, self-documentary, hindsight, ambiguity aversion, over-optimism, myopia, optimism, mental accounting, belief perseverance, event framing, loss aversion, novelty-seeking, regret aversion, shape preference, reversal aversion, and many more (Ndou, 2023).

Financial illiteracy among participants in all markets, especially financial markets, violates the first condition of a free market according to its theoretical definition (equal access to information) and can impact the performance of these markets. Therefore, one of the main issues in the efficiency of financial markets is the financial literacy of current or potential participants. Policymakers who seek to develop financial markets based on economic market theories must be aware of the minimum level of financial literacy required for participants in financial markets to achieve their goals. Additionally, the evaluation of the financial literacy level of participants at different time intervals must be conducted accurately. Financial literacy is the ability of an individual to use their knowledge and skills to manage their financial resources effectively for financial security throughout their lifetime (Arianti, 2018).

Given the lack of consensus in defining financial literacy, it is not surprising that various methods exist for assessing it. This is because the assessment of any subject is fundamentally tied to its definition, meaning that the boundaries and scope of the definition determine the dimensions and content of the assessment. Examining the research conducted in the field of financial literacy reveals differences in both the content and methods of assessment (Ghalmegh et al., 2019).

An important feature of this research is its focus on financial literacy and decision-making. While controlling for other wealth-determining factors such as income and education, the study also considers the influence of several variables proposed by behavioral economics, such as overconfidence, conservatism, self-documentary, and risk tolerance.

Theoretical Foundations of the Research

Concept and Importance of Financial Literacy

Based on theoretical concepts of financial literacy, the ultimate goal of the accounting process is to provide useful information to a wide range of users to assist in decision-making. Users of financial statements, especially investors, evaluate the information provided by companies to meet their informational needs and make informed decisions. For this information to be useful in decision-making, users must be able to understand it. Some have referred to this as a bridge between users and informed decision-making. In other words, as long as the information is not understood, the ability to use it in the future will be limited. Achieving understandable information is crucial, and in recent theoretical foundations, it is referred to as financial literacy (Bhushan & Medury, 2013). The results of previous research directly and indirectly indicate that financial literacy of financial reports is one of the influential factors on investors' decisions (Bhushan & Medury, 2013). In recent years, literacy in financial information and accounting text has gained significant attention from market observers. Since achieving the qualitative property of understandability is largely dependent on the concept of literacy, understanding the extent to which literacy affects various decisions of stakeholders, especially investors, seems essential. However, so far, few empirical studies have examined the consequences of financial information literacy (Nurjannah et al., 2023). The aim of this research is to investigate the relationship between financial statement literacy and investors' sensitivity to the use of accounting information. This research is important for several reasons. Firstly, it leads to a more comprehensive theoretical framework in the linguistic field and is expected to be useful for a wide range of stakeholders in this area. Secondly, the study aims to explore the extent to which the concept of literacy can play a role in investors' judgments and sensitivity to the use of accounting information (Nurjannah et al., 2023).

Factors Affecting Financial Literacy

Financial literacy is considered one of the most important sources of information for legislators, shareholders, financial report analysts, and other stakeholders. These reports will be useful to users if they are easily understandable. Therefore, literacy in financial reporting is of particular importance. One of the main goals of financial reporting is to provide the necessary information for decision-making to stakeholders or market analysts (Shusha, 2017).

Several factors can impact financial reporting literacy. One of these factors is the organization's success in observing and performing its relevant social responsibilities. Social responsibility, as a strategic tool for increasing the value and long-term sustainability of a company, involves creating positive relationships with the community, adhering to laws and regulations, and implementing ethical procedures. The simultaneous consideration of social environment, social performance, and social responsibility, along with the advancement of societies and attention to human rights, has highlighted the concept of corporate social responsibility in recent decades. Companies are now expected to be responsive to the environment and stakeholders. In addition to the traditional responsibilities of companies, such as profitability, companies are responsible for society and the environment. Their responsibilities extend beyond shareholders to include citizens, who have gained increased attention. Companies are now expected to be accountable not only for their profitability but also for their impact on society and the environment (Sajadi et al., 2014). Another factor that can significantly impact financial reporting literacy is adherence to professional ethics (Sajadi et al., 2014).

Another factor that seems to have a close relationship with financial reporting literacy is the management of the tone of financial reporting. The type of writing in financial reports and the tone during presentations can influence how users perceive the information. Overall, the tone, whether positive or negative, is a tool that managers use in non-numerical, explanatory, and even oral reports. Like reading, the tone can impact the decision-making of annual report users (Sajadi et al., 2014).

Financial reporting literacy, defined as the transparency of the text and success in making financial information understandable, is crucial. Investors, analysts, and other stakeholders widely rely on the information presented in company reports. Clarity, transparency, and understanding of these reports are of great importance to auditors and investors. Recent changes in laws and financial reporting have increased the required disclosures in annual reports. According to the assumption of managerial ambiguity, managers' motivations can lead to ambiguity and hiding information by reducing transparency in disclosures. Managers may hide information they do not want to disclose, making financial reporting difficult for investors to understand (Sajadi et al., 2014).

The Effects of Financial Literacy on Investor Decision-Making

This study examines how disclosures with lower literacy levels affect the sensitivity of investors' evaluative judgments toward external sources of information. Using a controlled experiment, it was determined that when a company provides less literate disclosures, participants feel less comfortable evaluating the company, and their judgments about the company are more sensitive to the content of external information sources. Additionally, if investors' behavior is more stringent, less literate disclosures may increase the likelihood that investors, not only in recent periods but also in future periods, direct their attention towards external information. This suggests a worsening of managers' ability to effectively communicate private information to investors (Tega et al, 2023).

In general, our results particularly indicate that an increase in disclosure literacy reduces investors' inclination to rely on external information, suggesting that investors may rely more on well-literate disclosures. From an economic theory perspective, if financial statements provided by companies have low literacy, investors may find it challenging to evaluate them, leading them to seek and rely on other information. Consequently, it is expected that their sensitivity to the use of company accounting information will decrease, as accounting information is limited compared to extensive and varied other information. Therefore, investors may become confused, making their decision-making process more complex. As a result, investors' judgments about non-accounting information become more sensitive in these conditions, signifying that the impact of other information on their judgments becomes more pronounced compared to company accounting information, which fades into the background (Arianti, 2018).

Based on the obtained results, it can be stated that investors feel more discomfort in evaluating a company based on less literate disclosures. This result indicates that providing less literate disclosures may reduce managers' ability to convey information to investors, making investors rely on external information instead of company disclosures. More literate disclosures may lead investors to rely more on company disclosures, reducing their inclination to incorporate external information into their evaluations. In other words, when investors feel they cannot rely on current company disclosures and, therefore, find it challenging to evaluate the company's future performance, they are more likely to seek external information and rely on it as a tool for evaluating the company (Slovic et al., 1977).

These findings suggest that individuals who feel more comfortable making decisions based on the current set of information may expect less benefit from conducting additional information searches, and therefore, they are more likely to end their information search with a higher probability. Similarly, investors who feel less comfortable evaluating the company based on company disclosures may expect greater benefits (profits) from searching for external information (Arianti, 2018).

(Arianti, 2018) From the overall findings, it can be concluded that investors, after receiving reports with less literacy, will have less comfort in evaluating the company. Additionally, studies emphasizing the fluidity of processing indicate that a fluent text can bring about a more favorable evaluation of information, showing that more literate disclosures may have limitations in investors' understanding. These limitations provide opportunities for future research. The constraints include:

• First, in implementing this scenario, the researcher only had access to a limited set of information for participants to maintain task management capabilities, while in the real world, investors have access to a variety of information resources.

• Second, some participants may want to have good external information access due to certain experiential needs. This potential increase in information search criteria may

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

reduce the ability to detect the relationship between disclosure literacy and information search.

• Third, all participants in the study observed company disclosure before external information. Investors can practically choose the timing or accessibility of company disclosures. While the potential impact of this choice is not directly tested in the design, even if external information is available before company disclosures, the literacy of company disclosures can still influence investors' relative reliance on company disclosures versus external information.

In conclusion, future research can explore how disclosure literacy affects information search and reliance on external information for disclosures that include positive, forward-looking, and historical information.

Strategies for Improving Financial Literacy

Most companies, in pursuit of their goals, opt for a set of interconnected strategies designed at various levels within the organization, rather than adopting a comprehensive and unitary approach. In larger companies with multiple products, these levels are categorized as follows: 1. Corporate Strategy, 2. Business Commercial Strategy, and 3. Functional Operational Strategy. It should be noted that in smaller companies, the first and second levels are often merged into one, creating a single level (Tega, 2023). At the Corporate Strategy level, decisions are made regarding overall obje ctives and businesses in which the company intends to invest. This level primarily includes board members, CEOs, and administrative managers. Business Commercial Strategy encompasses a section of the company, a product line, or other profitable centers that can operate independently of other units. At the Business Commercial Strategy level, the focus is more on creating sustainable competitive advantages for products. The third level is the Functional Operational Strategy, mainly involving managers responsible for products, geography, and functional areas. At this level, the responsibility includes formulating annual goals and short-term strategies in areas such as production, operations, research and development, finance and accounting, marketing, and human relations. Nevertheless, larger responsibilities are related to the execution of the company's strategic plans (Tega, 2023). Managers at the Corporate Strategy level and Business Commercial Strategy level focus on executing the right actions, while managers at the Functional Operational Strategy level concentrate on performing the right tasks. There is a close relationship among these three strategy levels (Sajadi et al., 2014).

There are two prevalent and dominant frameworks for business strategies: 1. Porter's Framework, 2. Miles and Snow Framework, and 3. Porter's Framework, which focuses on customers and competitors. According to Porter, the overall strategy for businesses includes cost leadership, differentiation, and focus, which can be employed at the business unit level and contribute to creating added value for the business. The Miles and Snow framework concentrates on the willingness to change products and market focus. It is usually implemented at the product level, emphasizing improving the competitive position of the company's products and services in a specific market segment. Through research on various types of companies, it has been concluded that companies, to reduce the negative impact of the environment and benefit from opportunities while adapting to conditions, primarily employ one of four types of strategies: aggressive, defensive, analytical, and reactive (Oppong et al., 2023). A summary of the characteristics of these four strategies is provided. The research results indicate that the business strategy, considering the company's structure and processes, technology, market and product scope, capacity, and knowledge domain, affects how the company achieves its goals and the desired performance. The complexity of operations and environmental uncertainty, incorrect reporting, aggressive tax behavior, the risk of stock price decline, internal control and audit quality, audit reports, investment levels, and manager rewards are among the factors studied in the informational environment (Sajadi et al., 2014).

Research conducted on financial literacy in financial reports indicates that financial reporting literacy is associated with messages from audit reports, reactions exceeding or falling short of investor expectations, coverage, dispersion, and accuracy of analysts' profit predictions, transparency of the company's financial position and performance, institutional ownership debt costs, analysts' ability, and transaction volume, voluntary disclosure, earnings management, credit rating, and debt costs, management ability, audit fee, and business strategy (Barber & Odean, 1998).

Literacy is easily defined as the ability to read and comprehend a text by the reader. In accounting and financial literature, financial reporting literacy of companies has also received attention, and various research has been conducted to examine the factors affecting it. One of the influential factors in the level of financial reporting literacy is the business strategy of the company, which can determine the articulation and clarity of the disclosed information for users of financial reports. In this regard, the present study investigates the impact of business strategy on the financial reporting literacy of companies. For this purpose, the business strategy of companies was divided into defensive and aggressive strategies using the scoring system, and the FOG index was utilized to measure the level of financial reporting literacy of companies. The results of the research indicate a significant and positive relationship between the business strategy and the FOG index. In other words, if a company has an aggressive business strategy, it tends to have lower financial reporting literacy (Bucher-Koenen et al., 2021).

Companies with aggressive strategies strive to produce new products and discover market opportunities. Therefore, they significantly modify their technologies. As these companies operate in a highly competitive environment, predicting the outcomes of new products is challenging. Moreover, because aggressive companies expect any bad news to be accompanied by significant failure, they disclose more complex and technical information. Consequently, companies with aggressive strategies, due to operating in an uncertain and competitive environment, attempt to provide ambiguous and complex information about processes and new products. The findings of the current research align with the results of previous studies. Furthermore, the present research results are consistent with financial research, indicating that the complexity of operations and environmental uncertainty leads to a reduction in the clarity of disclosed information (Bucher-Koenen et al., 2021).

In addition to the types of investors, their ownership structure in companies also varies. In other words, part of the ownership belongs to major investors, and another part belongs to minor shareholders. Major investors, given their significant ownership stake in companies, wield considerable power. When major shareholders hold a substantial percentage of a company's shares, they can impose their policies on the company and attract private interests that others may not be able to attain. Major investors often play a significant role in the process of selecting the board of directors and can have direct access to valuable confidential information that is not easily accessible to the public (Bucher-Koenen et al., 2021).

Conversely, minor investors rely on publicly available information, such as financial statements, for monitoring management performance and decision-making. Based on these foundations, it is inferred that the mentioned sensitivity in the main hypothesis is higher for companies with minor investors.

Why is there a significant statistical relationship between financial literacy and behavioral biases of investors in the Tehran Stock Exchange? To test this hypothesis, the Pearson correlation coefficient has been employed. From an objective perspective, this research is both fundamental and applied. Its fundamental goal is to explain the relationship between personality behavioral biases and the level of financial literacy of investors. On the other hand, this study is considered applied research conducted to develop applied knowledge in the fields of behavioral finance and empirical accounting theory. In terms of data collection, this study can be considered a descriptive survey research, used to examine the distribution of characteristics in the statistical population under study (Droms, 2009).

Is there a significant relationship between occupational and educational factors with financial literacy or not? To answer this question, monthly income, education level, field of study, employment status, and occupational field are considered as occupational and educational factors. In short, the research results show that investors with higher monthly incomes also have higher levels of financial literacy, which seems logical and is consistent with other studies conducted in this field. For example, similar results were obtained among Iranian students in another study. The level of education does not affect financial literacy, as this research only focuses on the general financial literacy of investors. Unfortunately, most university academic curricula currently lack these topics in the majority of academic disciplines. The research results indicate that the financial literacy of students with higher education levels is higher than that of other students (Barber & Odean, 1998).

Overconfidence in Investors

Overconfidence, or excessive trust, can be defined as a baseless belief in one's cognitive abilities, judgments, and intuitive reasoning. The concept of overconfidence arises from a wide range of psychological tests and examinations in which individuals overestimate both their predictive abilities and the accuracy of the information provided to them. Investors, in particular, tend to have excessive confidence in their investment abilities. The confidence they allocate to their investment predictions is often very high. This type of overconfidence is referred to as over-precision in forecasting (Barber & Odean, 1998). Some investors are also frequently very confident in their judgments, termed over-certainty. For instance, after identifying a suitable company for investment, individuals often overlook the prospect of loss. If such investments result in poor performance, investors may be surprised or disappointed. This behavior leads to investors' inclination to identify "the next hot stocks," resulting in excessive trading and potentially having inadequately diversified portfolios. These investors often refrain from diversifying their portfolios, claiming access to confidential information about the companies or having an emotionally unbreakable connection to them. Consequently, they are unwilling to accept the reality that such investments may pose risks, and this overconfidence in forecasting can lead to significant losses (Roshangarzadeh et al., 2023) Individuals tend to exaggerate their abilities, including predictive power, perceptual information, and knowledge. In other words, they have excessive trust in their abilities and knowledge, meaning that information available to investors may not be perceived accurately. Nevertheless, they consider themselves competent in interpreting information and make decisions based on it. Overconfidence manifests in various ways, with individuals exposed to this bias often failing to use diversification in their investments. Instead, they typically invest in companies they are familiar with, showing a preference for local stocks or those associated with their workplace (Roshangarzadeh et al., 2023).

Self-Serving Bias in Investors

Self-serving bias is a crucial concept in psychology, referring to the tendency of individuals to attribute their successes to internal factors, such as talent or insight, while attributing failures to external factors beyond their control (Miller & Ross, 1975). The inclination of individuals to attribute their successes to intrinsic qualities like abilities or foresight and attribute failures to external factors, such as bad luck (Mohammadi et al., 2017), is contingent on this bias. In other words, this bias aligns with the theory of self-serving bias. Individuals prefer to attribute their successes to internal and intrinsic factors like their capabilities, while considering their failures as insignificant and attributing them to external factors like the shortcomings of others (Droms, 2009).

Investors' Risk Appetite

Risk appetite, as one of the topics in behavioral finance, is the extent to which individuals are encouraged to take initiative and engage in risky activities. In essence, risk appetite is an individual's inclination to enter decision-making scenarios (LariSemnani, 2018). Risk is a significant factor influencing the decision-making process for investors. It is evident that desirable investment aligns with economic and social development (Sajadi et al, 2013). The level of risk and the factors affecting risk are crucial considerations for investors in planning their investments to achieve favorable outcomes.

Many scholars in the field of risk believe that individuals' financial literacy enhances their risk-taking ability. Various theories exist regarding the factors influencing investors' risk appetite. Some researchers consider demographic variables, such as gender (men being more risk-tolerant) and age (younger individuals being more risk-tolerant), as influential factors in their risk tolerance. Others emphasize the personality traits of individuals and assert that, regardless of demographic characteristics, psychological traits significantly affect individuals' willingness to take risks. According to this group of scholars, characteristics such as risk tolerance are part of individuals' personalities and may even be considered hereditary (Einabadi & Khoshfetrat, 2023).

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

While some argue that personality traits alone do not determine an individual's risk tolerance, others believe that an individual's ability to recognize, understand, and analyze factors affecting stock markets, such as industry-related factors, environmental factors, and internal factors of stock-supplying companies, can influence investors' risk tolerance. This approach, while accepting some aspects of the mentioned theories, overall contends that risk and risk appetite are primarily acquired and dependent on the individual's surrounding environment. One of the most important factors considered by these scholars is individuals' financial literacy. In this context, individuals with higher financial literacy, due to better understanding and mastery of conditions, tend to take less risk in their financial decisions. Even if they do take risks, these are calculated risks based on careful planning (Einabadi & Khoshfetrat, 2023)**.**

Investors' Cognitive Dissonance

Cognitive dissonance adaptation is essentially an effort to overcome mental discomfort resulting from conflicts and cognitions. Cognition refers to attitudes, emotions, beliefs, and values. Individuals typically experience a form of mental discomfort when confronted with new information that contradicts their previous perceptions. Cognitive dissonance adaptation is a form of imbalance that involves a response in the form of confrontation and efforts to harmonize conflicts and overcome mental discomfort (Arefinejad & Shahrestani, 2023).

The Relationship Between Financial Literacy and Overconfidence in Investors

Overconfidence or excessive self-confidence can be summarized as a groundless belief in one's cognitive abilities, judgments, and intuitive reasoning. The concept of overconfidence has been extensively examined in a broad range of cognitive psychological studies, revealing that individuals tend to overestimate both their predictive abilities and the accuracy of the information available to them. Furthermore, in assessing probabilities, they exhibit poor performance, often assigning much lower probabilities to events they consider certain. In essence, people often perceive themselves as more intelligent instance, upon hearing confidential news from a financial advisor or reading an article on the than they truly are and believe they possess better information. For internet, individuals immediately feel prepared to act based on their perceived informational advantage. This readiness to make quick decisions, especially regarding investments, is a common characteristic of overconfidence. (Badri & Kouchi, 2013)

In the field of economics, researchers typically categorize overconfidence into two broader subsets:

1. Belief that individuals know more than they actually do.

2. Belief that individuals are superior to others and know more than others.

The Relationship Between Financial Literacy and Investor Adaptability

Adaptability in individuals with higher financial literacy refers to their ability to align with various situations, environments, and different conditions. Generally, adaptable individuals possess the capacity to adjust to changes and pressures easily, allowing them

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236 www.ijmae.com

to adapt to new circumstances. They often demonstrate a higher ability to cope with stress, life challenges, or positive and negative changes. Therefore, enhancing financial literacy skills and understanding financial concepts can contribute to better management of conditions (Adil et al., 2022).

The Relationship Between Financial Literacy and Self-Attribution Bias in Investors

Self-attribution bias refers to the tendency of individuals to attribute their successes to intrinsic qualities such as talent or insight, while often attributing their failures to external factors like bad luck. For example, students who succeed in an exam may praise their intelligence or diligence, but when they perform poorly, they frequently complain about unfair grading. Similarly, athletes who win a competition often argue that they have enhanced their superior sports skills, but when they lose, they claim to be victims of unfair refereeing. Self-attribution bias is a cognitive phenomenon that leads individuals to relate their failures to external factors and their successes to their intrinsic qualities (Miller & Ross, 1975).

The Relationship Between Financial Literacy and Investor Risk-Taking

The connection between financial literacy and investor risk-taking pertains to uncertainty and awareness of the outcome of an action, which is referred to as risk. It involves undertaking an action without knowing its outcome. Therefore, for risk-seeking investors, it is necessary to embark on paths where the results may not be entirely clear, or one might not have full knowledge of the path taken. While there are methods for achieving success with lower risk, it is known that influential individuals in the world have consistently been part of groups with high risk-taking tendencies. Hence, unless we step into the unknown, we cannot achieve specific and unique success (Ndou, 2023).

Research Background

(Wijayanto et al., 2023) conducted a realizó titled Financial Literacy and Behavioral Bias of Individual Investors: Empirical Research in Indonesia”. Financial literacy and behavioural biases are critical factors that influence investment-decision making individual investors. This study aims to identify financial literacy relationships and behavioural biases (overconfidence, representativeness, and illusion of control) which can lead to irrational behaviour in investment decision making. The population in this research data is individual investors who are on Java. Based on the purposive sampling method, the sample was 83 respondents through a questionnaire. The data obtained, passed the validity test, reliability test, classical assumption test, and multiple regression analysis to test the hypothesis. Hypothesis testing concludes that financial literacy has a negative effect on behavioural biases, meaning increasing financial literacy, so individual investors are increasingly objective in making investment decisions, and will reduce behavioural biases.

(Weixiang et al., 2022) conducted a study titled "An Empirical Assessment of Financial Literacy and Behavioral Biases in Investment Decision: Fresh Evidence From Small Investor Perception." This research specifically explores the impact of behavioral biases and financial literacy on investment choices, particularly in stock market

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

investments. The study assessed a representative sample of 450 individual investors. A structured questionnaire using Likert scales was designed to extract research variables, and the data obtained underwent analysis using SEM (Structural Equation Modeling) methods. The findings reveal a significant statistical relationship between exploratory bias and the development of behavioral biases in decision-making. However, cognitive illusions, herd mentality, and framing effects all have detrimental effects on behavioral biases. Moreover, investors often adhere to exploratory biases rather than other non-rational strategies when judging investments. Therefore, the level of financial literacy strongly influences the investment choices made in the stock market.

(Adil et al., 2021) conducted a study titled "How Financial Literacy Moderate the Association Between Behavioral Biases and Investment Decisions?" The aim of this study is to examine the impact of behavioral biases (such as overconfidence, risk aversion, herding, and disposition) on investment decisions across genders. The authors predominantly investigate the moderating effect of financial literacy on the relationship between behavioral biases and investment decisions among genders.

(Lebdaoui et al., 2021) conducted a study titled "The Impact of Behavioral Biases on Investment Performance: Does Financial Literacy Matter?" This article aims to examine the impact of behavioral biases and financial literacy on investment performance in the emerging stock market. Based on data collected from a sample of 196 Moroccan investors active in the Casablanca Stock Exchange, the research hypotheses were examined using structural equation modeling, focusing on four biases within our proposed conceptual framework (i.e., overconfidence, representativeness, anchoring, and herding). The results show that only overconfidence and representativeness have a significant positive impact on financial performance. The study also demonstrates a significant positive impact of financial literacy on representativeness, while a negative association with overconfidence was found. This research is the first of its kind to examine the existence of behavioral biases in emerging African and Arab markets, representing an initial attempt to investigate the relationship between behavioral biases and investor performance.

(Hsu et al., 2021) conducted a study titled "Does Financial Literacy Reduce Gender Differences in Behavioral Biases in Investment?" This research investigates gender differences in certain behavioral biases using an online survey of individual investors aged eighteen and above, each with at least one year of stock trading experience in Taiwan. The results indicate that women are significantly more risk-averse than men, while men exhibit higher levels of overconfidence, illusion of control, and confirmation bias compared to women. However, among individuals with a high level of financial literacy, the prevalence of behavioral biases is similar for both genders. This suggests that financial literacy reduces gender differences in behavioral biases.

(Madaan & Singh, 2019) conducted a study titled "An Analysis of Behavioral Biases in Investment Decision-Making." In this study, four behavioral biases named overconfidence, anchoring, herding, and confirmation bias were examined. The results show that overconfidence and herding behavior have a positive and significant impact on investment decisions. The overall findings suggest that individual investors with limited knowledge are more susceptible to psychological errors. The research findings also indicate the existence of these four behavioral biases in investment decision-making. This

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

study will be beneficial for financial intermediaries to provide guidance to their clients. Additionally, it can serve as a basis for further exploration of other behavioral biases in investment decision-making.

(Baker et al., 2018) In the study conducted by Guer titled "How financial literacy and demographic variables relate to behavioral biases," the objective was to investigate how financial literacy and demographic variables (gender, age, income level, education, occupation, marital status, and investment experience) relate to behavioral biases. Unfortunately, the specific findings and details of the study's results were not provided in your input. If you have specific questions or if there's a particular aspect you would like more information on from this study, please let me know.

(Abdeldayem, 2016) conducted a study titled "Is There a Relationship Between Financial Literacy and Investment Decisions in the Kingdom of Bahrain?" The results show that the financial literacy level of Bahraini investors is low (6.38%). When analyzing financial literacy based on demographic variables, it was found that women generally have lower financial literacy than men. Respondents aged 41 to 50 are more aware across all age groups, and financial literacy correlates highly with education. Furthermore, participants in the High Financial Literacy Group (HFLG) have higher awareness levels of all financial products except for deposit certificates and postal savings. In conclusion, those in the Low Financial Literacy Group (LFLG) mostly prefer traditional and secure financial products, while they do not invest significantly in complex financial products that are relatively risky and could yield higher returns.

Research Hypotheses

H_1: Financial literacy has a significant effect on behavioral biases of investors.

- Sub-Hypothesis 1: Professional financial literacy has a significant effect on investor overconfidence.

- Sub-Hypothesis 2: Professional financial literacy has a significant effect on investor conservatism.

- Sub-Hypothesis 3: Professional financial literacy has a significant effect on investor self-attribution.

- Sub-Hypothesis 4: Professional financial literacy has a significant effect on investor risk tolerance.

H_2: Moderate financial literacy has a significant effect on behavioral biases of investors.

- Sub-Hypothesis 5: Moderate financial literacy has a significant effect on investor overconfidence.

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

- Sub-Hypothesis 6: Moderate financial literacy has a significant effect on investor conservatism.

- Sub-Hypothesis 7: Moderate financial literacy has a significant effect on investor self-attribution.

- Sub-Hypothesis 8: Moderate financial literacy has a significant effect on investor risk tolerance.

H_3: Low financial literacy has a significant effect on behavioral biases of investors.

- Sub-Hypothesis 9: Low financial literacy has a significant effect on investor overconfidence.

- Sub-Hypothesis 10: Low financial literacy has a significant effect on investor conservatism.

- Sub-Hypothesis 11: Low financial literacy has a significant effect on investor self-attribution.

- Sub-Hypothesis 12: Low financial literacy has a significant effect on investor risk tolerance.

Research Methodology

The primary objective of this research is to investigate the relationship between different levels of financial literacy (basic, advanced, and advanced considering other factors) and behavioral biases of investors. The statistical population of the study includes investors in the Tehran Stock Exchange in the year 1402 (Solar Hijri calendar). The sample size under investigation in this study consists of 384 individuals, distributed among them using the available sampling method over a specific time period.

Given the uncertainty in the number of investors in the stock market, the Cochran formula is employed to calculate the sample size for unknown populations:

$$\mathrm{n} = \frac{\left(\boldsymbol{Z}^{2}_{\frac{\propto}{2}} \times \boldsymbol{S}^{2}\right)}{\boldsymbol{d}^{2}} = 384$$

In the above formula $\boldsymbol{Z}_{\propto/2}$ is calculated at a 5% error level and assumed to be 1.96. The error rate (d) is considered as 5%.

The questionnaire consists of questions presented in Table (1).

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

Table 1. Research Questionnaire Questions

Overconfidence	Description of the question
F1	During my decision-making, I don't allow false confidence to dominate me.
F2	I acknowledge that some of my successful investments in the stock market are due to my good luck.
F3	When my stock investments become profitable, I don't let pride take over.
F4	I never accept a risk greater than what I have the capacity and tolerance for.
F5	I have more confidence in my predictions than necessary.
Adaptability	Description of the question
S1	I often try to avoid unfavorable situations.
S2	Challenging situations are not attractive to me.
S3	If I feel that there are unfavorable conditions in my investments, I refrain from engaging in them.
S4	I become satisfied with an investment only when there is minimal doubt about its compatibility with acceptable conditions.
S5	I choose investment opportunities that align with my goals and are in harmony with the conditions.
Self-documentation	Description of the question
K1	Usually, when I encounter failures in an investment, I search for the cause among external environmental factors.
K2	It is less likely that the financial failures of the company are due to my wrong decisions.
K3	I believe that most of the investment successes of the company result from my experiences.
K4	When faced with a failure in an investment, I believe that part of the problem has been on my part.
K5	In the financial failures and investments I have faced, other individuals have also been involved.
Risk taking	Description of the question
R1	I am willing to accept a high level of risk for a predicted level of return in my investments.
R2	Even if the cash flow in my investments is unpredictable, I am still willing to invest.
R3	I have the ability to tolerate failure in my investments.
R4	In uncertain environmental conditions, I have a high ability to make investment decisions.
R5	I am risk-tolerant in my investments because I expect a high return from them.

To examine the reliability of the questionnaire items, Cronbach's alpha coefficients were used. The results of this test are presented in Table 2.

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

Table 2. Cronbach's Alpha Coefficients

No	variable	Number of questions	Cronbach's alpha	Cronbach's alpha of all questions
1	overconfidence	5	0.787	0.845
2	adaptability	5	0.785	
3	Self-documentation	5	0.786	
4	risk taking	5	0.811	

The results in Table 2 indicate that the Cronbach's alpha coefficient for the research questions is greater than 0.70; therefore, the reliability of the questionnaire is at an acceptable level.

Research Findings

To measure the levels of financial literacy, the questions in the demographic section of the questionnaire are used. In this section, questions about the history of activity in the stock market, the level of education, and the field of study are addressed.

Table 3. Classifications Related to Levels of Financial Literacy

Professional reading	Postgraduate education (Master's or Ph.D.) in relevant fields such as accounting, financial management, financial engineering, or economics is required, or more than 5 years of professional experience in the stock market**.**
Average readability	A bachelor's degree in related fields such as accounting, financial management, financial engineering, or economics is required, or between 2 to 5 years of professional experience in the stock market**.**
Poor readability	Without academic qualifications in related fields such as accounting, financial management, financial engineering, or economics, or less than one year of professional experience in the stock market**.**

Descriptive statistics for each of the items are presented in Table 4. These statistics include the minimum, maximum, mean, and standard deviation of the research items.

Table 4. Descriptive Statistics of Research Items

Symbol	Number	Min	max	average	standard deviation
F1	390	1	5	3.93	0.784
F2	390	1	5	4.11	0.812
F3	390	1	5	4.13	0.787
F4	390	1	5	3.59	1.194
F5	390	1	5	3.98	0.943
S1	390	1	5	3.96	1.044
S2	390	1	5	3.76	1.093
S3	390	1	5	4.21	0.778

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

Symbol	Number	Min	max	average	standard deviation
S4	390	1	5	4.22	0.866
S5	390	1	5	3.57	1.136
K1	390	1	5	3.84	0.982
K2	390	1	5	4.08	0.901
K3	390	1	5	3.06	1.010
K4	390	1	5	4.15	0.850
K5	390	1	5	3.75	1.030
R1	390	1	5	3.51	1.151
R2	390	1	5	3.41	0.989
R3	390	1	5	4.06	0.761
R4	390	1	5	4.13	0.892
R5	390	1	5	4.28	0.707

Table (4) indicates that the highest mean is related to item S4, and the lowest mean is related to K3. Most items have a minimum value of 1, and all items have a maximum value of 5. An important point is the standard deviation of the research items. Considering that the standard deviation of the research items is around ±2, it can be concluded that the research variables are normally distributed**.**

To determine whether the research data are suitable for factor analysis in terms of sample size and the relationship between variables, the Kaiser-Meyer-Olkin (KMO) index and the Bartlett's test were used. The results of these tests are presented in Table (5)**.**

Table 5. Results of Model Adequacy and KMO Test

Variable	Number of questions	d.f	Bartlett's test Sig	KMO
overconfidence	5-1	10	0.0000	0.739
adaptability	10-6	10	0.0000	0.748
Self-documentation	15-11	10	0.0000	0.795
risk taking	20-16	10	0.0000	0.790
Total questions	20	190	0.0000	0.737

As seen in the table above, considering that the KMO index is greater than 0.7, the model adequacy is confirmed, and the data are suitable for factor analysis.

Table 6 indicates the communalities of each variable, expressing the proportion of variance in each variable accounted for by the common factors. According to this table, since the communalities are mostly above 0.40, they remain in the model. Table (6) indicates the communalities of each variable, expressing the proportion of variance in each variable accounted for by the common factors. According to this table, since the communalities are mostly above 0.40, they remain in the model.

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

Table 6. Communalities of Questionnaire Items

Questionnaire questions	Shared value before factorization	Shared value after factorization
F1	1	0.421
F2	1	0.565
F3	1	0.614
F4	1	0.554
F5	1	0.572
S1	1	0.684
S2	1	0.525
S3	1	0.553
S4	1	0.720
S5	1	0.658
K1	1	0.523
K2	1	0.743
K3	1	0.790
K4	1	0.622
K5	1	0.624
R1	1	0.753
R2	1	0.661
R3	1	0.782
R4	1	0.610
R5	1	0.499

Once it was determined that all the items have the capability to enter the model, the structural equation model was implemented. In Figures (1) and (2), standardized coefficients and t-values are provided.

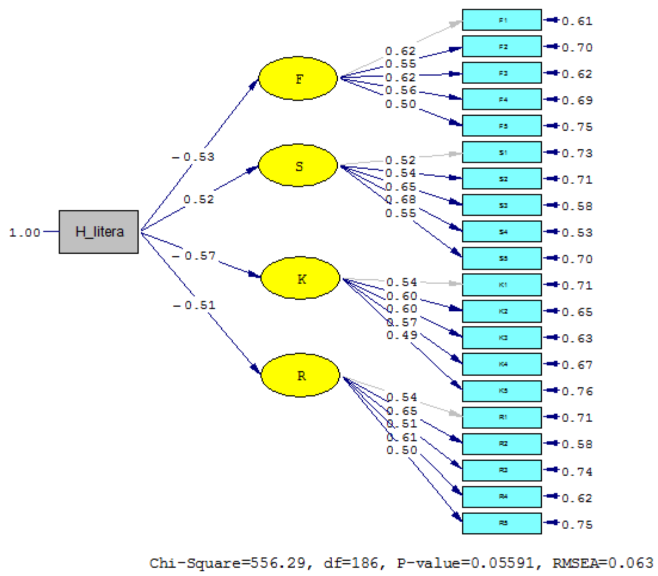

Figure 1. Standardized Coefficients of the First Hypothesis in the Research

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236 www.ijmae.com

Figure 1. illustrates the standardized coefficients of the variable 'professional financial literacy.' The coefficients indicate that professional financial literacy has a 53% negative impact on investor overconfidence. Moreover, the positive impact of professional financial literacy on investor consistency is 52%, on self-confidence is 57% with a negative direction, and ultimately, it has an inverse impact of 51% on risk tolerance.

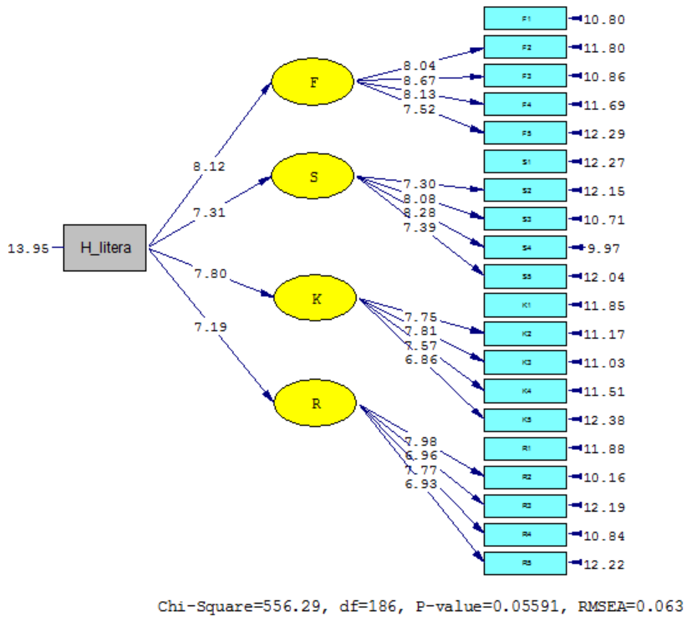

Figure 2. t-values for the first hypothesis of the research

Figure 2. presents the t-values for the research. Considering that the t-values for all paths in the above figure exceed the standard value of 1.96, the first hypothesis of the research is confirmed.

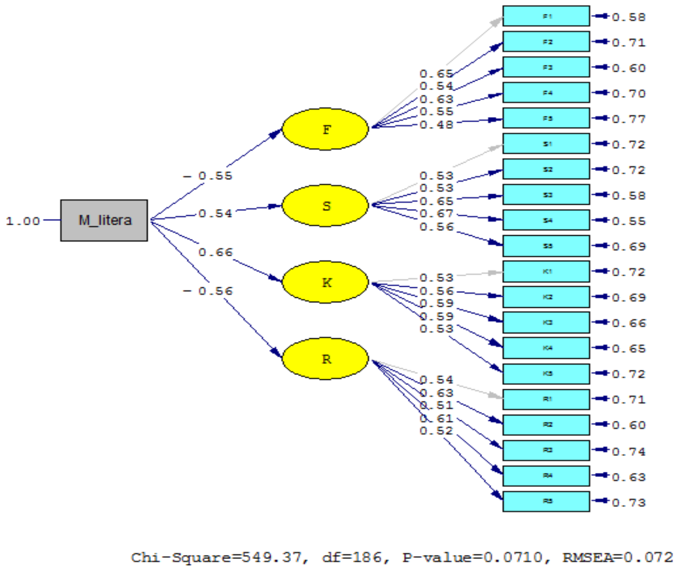

Figure 3. standardized coefficients of the second hypothesis.

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

Figure 3. displays the standardized coefficients of the variable 'average financial literacy' for the second hypothesis. The coefficients indicate that average financial literacy has a negative impact of 55% on investors' overconfidence. Furthermore, the influence of average financial literacy on investors' consistency is 54% in a positive direction, on self-confidence is 66% in a positive direction, and ultimately on risk aversion, it has a reversed effect of 56%.

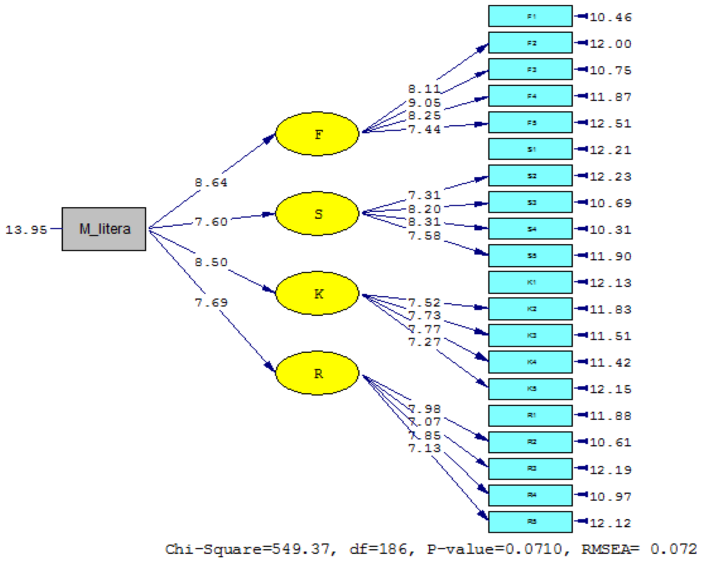

Figure 4. t-value for the second hypothesis of the research.

Figure 4. illustrates the t-value values for the research. Considering that the t-value values for all paths in the above figure are greater than the standard value of 1.96, the second hypothesis of the research is confirmed.

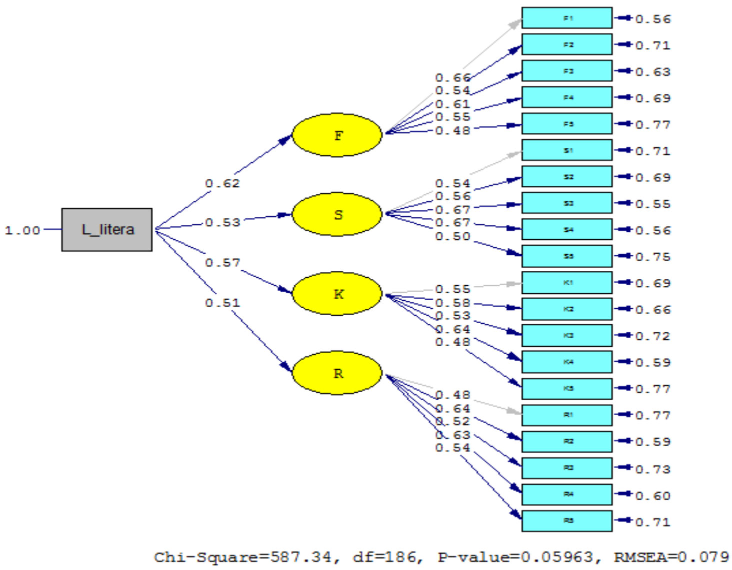

Figure 5. standardized coefficients for the third hypothesis of the research.

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

Figure 5. illustrates the standardized coefficients for the variable 'financial literacy - weak.' The coefficients indicate that weak financial literacy has a positive impact of 62% on investors' overconfidence. Additionally, the effect of weak financial literacy on investors' adaptability is 53% in a positive direction, 57% in a positive direction for self-documentation, and finally, an inverse impact of 51% on risk-taking.

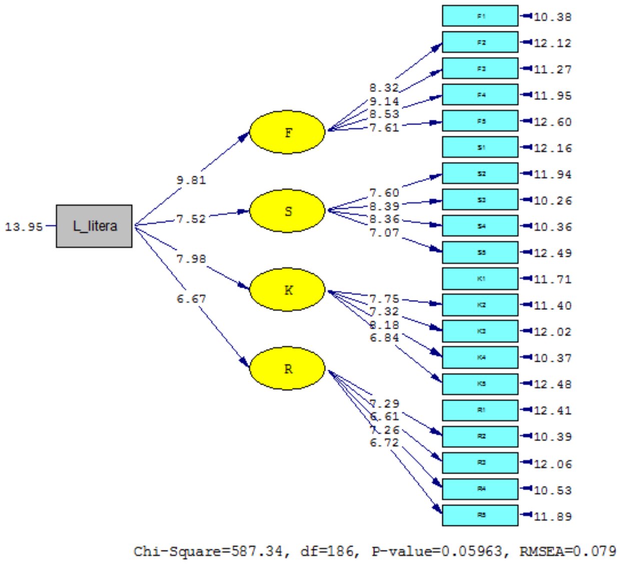

Figure 6. t-value for the third hypothesis of the study**.**

The values of t-value for the research are shown in Figure 6. Considering that the t-value values for all paths in the above figure are greater than the standard value of 1.96, the third hypothesis of the research is confirmed**.**

Conclusion

Hypothesis one suggests that professional financial literacy has a significant and inverse effect on investor overconfidence. The results of testing this hypothesis indicate a meaningful and inverse impact between these two variables. In other words, improving financial literacy leads to a reduction in overconfident behavior. Stated differently, when financial information is clear and understandable to investors, it can prevent the emergence of overconfidence. This finding is supported by the theory of supportive thinking.

According to this theory, analysts and investors prefer decisions that can be supported from an informational and conceptual perspective. Decision-makers and investors seek to reduce uncertainty and increase confidence. Based on the assumption that financial literacy influences overconfidence, it can be argued that presenting financial information in a way that provides the maximum cognitive support can reduce overconfident behavior. In essence, professional financial literacy can act as a form of supportive thinking for decision-makers, contributing to the improvement of trust in investor decisions.

Hypothesis two states that there is a significant relationship between financial literacy and adaptability. After testing, it was determined that there is a positive and meaningful relationship between professional financial literacy and adaptability. The results of this hypothesis indicate that individuals with greater skills in reading and understanding financial issues have a higher ability to adapt to different situations, environments, and conditions. Adaptable individuals usually have the capacity to adjust to various changes and pressures, easily adapting to new situations.

Adaptable individuals generally possess the ability to cope with stress, life challenges, and positive or negative changes in their lives. Therefore, enhancing financial skills and the ability to understand financial concepts can help individuals better manage their conditions and contribute to better coping with stress, life challenges, and positive or negative changes in their lives.

Hypothesis three suggests that there is a significant relationship between financial literacy and self-serving bias. Self-serving bias refers to individuals attributing their successes to inherent qualities such as talent, while often attributing their failures to external factors such as bad luck. For example, investors who successfully profit from a stock investment may attribute it to their own vigilance or diligence, but when the market and the situation of those stocks turn unfavorable, they often complain about political issues and unfair interventions.

Self-serving bias is a cognitive phenomenon that leads individuals to attribute their failures to external factors and their successes to their inherent qualities. It can be analyzed in two dimensions:

1- Self-enhancement bias: Reflects individuals praising their own skills and intelligence when successful, but often blaming political issues and unfair interventions when their stock investments do not yield profits.

2- Self-protection bias: Represents the message of an action, indicating the irrational denial and non-acceptance of the responsibilities of failure consequences.

Self-serving bias leads investors to overestimate themselves. If they believe that their successful investments are solely due to skill rather than luck and popularity, they may incur losses. This behavior is detrimental.

In self-serving bias, investors are inclined to 'hear what they want to hear.' This means that when information is presented to them, they tend to attribute sharp intelligence and cleverness to themselves. This behavior can lead to buying or holding onto a stock that should be avoided.

Individuals in self-serving bias may come to the conclusion that some investors, especially those who perceive the company's success as a result of their contribution in selecting executive management, board members, and the like, are special. A non-diversified investment portfolio can result from self-serving bias, where investors believe they should take credit for the success of the company due to their involvement in selecting executive management, board members, and the like. Non-diversified investment can lead to self-serving bias, and precautions should be taken to prevent it.

The fourth hypothesis of the research asserts that there is a significant relationship between financial literacy and risk tolerance. The reasoning behind this claim is that one of the key features in organizational performance is how its managers make decisions. In other words, decision-making is a prepared task for managers as they need to evaluate all options and accept the risk that future outcomes may vary. Many decision-making processes in the real world, such as stock portfolio selection, budgeting, and funding new projects, involve a series of interrelated decisions influenced by economic, social conditions, and personal characteristics of the manager. For example, loss aversion may lead us to avoid many profitable opportunities and be unwilling to take on the associated risks. In other words, risk-averse individuals have a conservative personality and want to be certain of a return. They will not engage in a matter involving chance and luck when it is brought up. In other words, another factor that can be constant in the performance of managers and plays a very important role in the efficiency and effectiveness of managers and organizations is the risk of a probability of 78.

Results can be either profitable or detrimental. Companies that have a higher risk tolerance gain more opportunities for advancement. Recognizing the fundamental determinants for decision-making in companies is challenging because risk is neither tangible nor universally interpreted, and individuals' tolerance levels vary. Identifying the factors affecting individuals' and companies' risk tolerance can be influential in making informed choices and selecting individuals at various levels of the organization. Based on the research findings, it is recommended that individuals enhance their financial skills. This improvement can be achieved by participating in training courses, workshops, and similar educational programs. Additionally, it is suggested that individuals, given the importance of financial awareness for market participants, actively monitor financial news, financial crises, and other financial developments. Finally, individuals with weak to moderate levels of financial literacy are advised to utilize modern financial instruments and capital markets, including analytical applications and online programs offered by institutions for fundamental and technical analysis. Some suggestions for future research include conduct longitudinal studies to examine the long-term effects of financial literacy interventions on investor behavior. Explore how cultural differences influence the relationship between financial literacy and investor behavior. Develop and test innovative interventions aimed at enhancing financial literacy among investors.

References

Abdeldayem, M. M. (2016). Is There a Relationship between Financial literacy and Investment Decisions in the Kingdom of Bahrain? Journal of Management and Accounting Studies, 4(02), Article 02. https://doi.org/10.24200/jmas.vol4iss02pp68-78

Adil, M., Singh, Y., & Ansari, M. (2022). Does financial literacy affect investor’s planned behavior as a moderator? Managerial Finance, 48. https://doi.org/10.1108/MF-03-2021-0130

Adil, M., Singh, Y., & Ansari, Mohd. S. (2021). How financial literacy moderate the association between behaviour biases and investment decision? Asian Journal of Accounting Research, 7(1), 17–30. https://doi.org/10.1108/AJAR-09-2020-0086

Arefinejad M., & Shahrashtani S. (2023). Investigating the impact of investment attitude on selected behavioral biases of stock exchange investors with the moderating role of personality types. Scientific Journal of New Research Approaches in Management and Accounting, 6(23), 981-1005. Retrieved from https://majournal.ir/index.php/ma/article/view/1728

Arianti, B. F. (2018). The Influence OF Financial Literacy, Financial Behavior And Income On Investment Decision.

Badri, A., & Kochaki, A. (2013). Trading volume and stock returns: Evidence from Tehran Stock Exchange based on behavioral finance analysis. Financial Accounting Quarterly, 5(18), 1-24.

Baker, H., Kumar, S., Goyal, N., & Gaur, V. (2018). How Financial Literacy and Demographic Variables Relate to Behavioral Biases. Managerial Finance, 45. https://doi.org/10.1108/MF-01-2018-0003

Barber, B. M., & Odean, T. (1998). The Common Stock Investment Performance of Individual Investors. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.94140

Bhushan, P., & Medury, Y. (2013). Financial literacy and its determinants. International Journal of Engineering, Business and Enterprise Applications, 4, 155–160.

Droms, C. (2009). An Investigation into Consumers' Repeated Attempts at Behavior Change. Theses and Dissertations. https://scholarcommons.sc.edu/etd/21

Einabadi, J., & Khoshfetrat, N. (2023). Investigating the risk tolerance of financial market investors and its relationship with financial literacy. Journal of Accounting and Management Vision, 5(72), 86–95.

Ghalmegh, K., Yaghoobnezhad, A., & Fallah Shams, M. (2019). The effect of financial literacy on Machiavellian personality of Tehran exchange market investors. Journal of Investment Knowledge, 8(30), 229–250.

Hsu, Y.-L., Chen, H.-L., Huang, P.-K., & Lin, W.-Y. (2021). Does financial literacy mitigate gender differences in investment behavioral bias? Finance Research Letters, 41, 101789. https://doi.org/10.1016/j.frl.2020.101789

Larisemnani, B., & Dehkhoda, A. (2020). Investigating the Impact of Mood on the Behavioral Finance Trap of Investors in Tehran Stock Exchange. Financial Management Perspective, 10(30), 143–162. https://doi.org/10.52547/jfmp.10.30.143

Lebdaoui, H., Youssef, C., & Guechi, E. (2021). The Impact of Behavioral Biases on Investment Performance: Does Financial Literacy Matter? International Journal of Economics and Financial Issues, 11, 13–21. https://doi.org/10.32479/ijefi.11318

Madaan, G., & Singh, S. (2019). An Analysis of Behavioral Biases in Investment Decision-Making. International Journal of Financial Research, 10, 55. https://doi.org/10.5430/ijfr.v10n4p55

Miller, D. T., & Ross, M. (1975). Self-serving biases in the attribution of causality: Fact or fiction? Psychological Bulletin, 82(2), 213–225. https://doi.org/10.1037/h0076486

Mohammadi, A., Shahmoradi, B., & Rostamkhani, H. (1396). A comparative study of the role of cognitive biases in the decision making of individual investors in the capital market and the housing market. Scientific Conference on Management, Applied Economics and Business. https://civilica.com/doc/680284/certificate/print

Ndou, A. (2023). The relationship between demographic factors and financial literacy. International Journal of Research in Business and Social Science (2147- 4478), 12(1), Article 1. https://doi.org/10.20525/ijrbs.v12i1.2298

Nurjannah, D., Wardhana, E. T. D. R. W., Handayati, P., Winarno, A., & Jihadi, M. (2023). The Influence of Managerial Capabilities, Financial Literacy, and Risk Mitigation On Msmes Business Sustainability. Journal of Law and Sustainable Development, 11(4), e520–e520. https://doi.org/10.55908/sdgs.v11i4.520

Oppong, C., Salifu Atchulo, A., Akwaa-Sekyi, E. K., Grant, D. D., & Kpegba, S. A. (2023). Financial literacy, investment and personal financial management nexus: Empirical evidence on private sector employees. Cogent Business & Management, 10(2), 2229106. https://doi.org/10.1080/23311975.2023.2229106

Roshangarzadeh, A., dastgir, M., & saedi, R. (2023). The Effect of Financial Literacy on Behavioral Biases of Overconfidence and Herding Behavior and Analysis of their Effect on Investors' Performance in Tehran Stock Exchange Using Structural Equation Modeling. *Journal of Capital Market Analysis*, *3*(2), 1-30.

Sajjadi, H. S., Farazmand, H., & Nikkar, F. (2014). The Effect Of Ownership Structureon The Investment Risk In Companies. 5(20), 29–55. https://sid.ir/paper/198047/fa

Shusha, A. (2017). Does Financial Literacy Moderate the Relationship among Demographic Characteristics and Financial Risk Tolerance? Evidence from Egypt. Australasian Accounting, Business and Finance Journal, 11(3), 67–86. https://doi.org/10.14453/aabfj.v11i3.6

Slovic, P., Fischhoff, B., & Lichtenstein, S. (1977). Behavioral Decision Theory. Annual Review of Psychology, 28(1), 1–39. https://doi.org/10.1146/annurev.ps.28.020177.000245

Tega H. Williams, Grace O. Iriobe, Thomas D. Ayodele, Sunday F. Olasupo & Michael O. Aladejebi. (2023) Do Illiteracy and Unemployment Affect Financial Inclusion in the Rural Areas of Developing Countries?. Investment Management and Financial Innovations 20:2, Pages 89-101.

International Journal of Management, Accounting and Economics
Volume 11, Issue 4, April 2024
ISSN 2383-2126 (Online)
DOI: https://doi.org/10.5281/zenodo.11111236
www.ijmae.com

Weixiang, S., Qamruzzaman, M., Rui, W., & Kler, R. (2022). An empirical assessment of financial literacy and behavioral biases on investment decision: Fresh evidence from small investor perception. Frontiers in Psychology, 13, 977444. https://doi.org/10.3389/fpsyg.2022.977444

Wijayanto, A., Ridloah, S., Abiprayu, K. B., Permana, M. V., & Rafinda, A. (2023). Financial Literacy and Behavioral Bias of Individual Investors: Empirical Research in Indonesia. 339–347. https://doi.org/10.2991/978-2-494069-35-0_42

Xiao, X., Li, X., & Zhou, Y. (2022). Financial literacy overconfidence and investment fraud victimization. *Economics Letters*, *212*, 110308. https://doi.org/10.1016/j.econlet.2022.110308

HOW TO CITE THIS ARTICLE

Azarberahman, A., Lalbar, A., Tohidinia, M., & Ghorbanpoor, Z. (2024). Investigating Various Levels of Financial Literacy with Behavioral Trends of Investors. International Journal of Management, Accounting and Economics, 11(4), 428-453.

DOI: https://doi.org/10.5281/zenodo.11111236

URL: https://www.ijmae.com/article_195093.html