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Research paper

Two Sides of a Coin: Effects of Perceived and Actual Financial Literacy on Investment Decision Making Behavior Mediated by Financial Risk Tolerance

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Abstract

Investment decision making is a complex phenomenon driven by the behavioral dimensions of investors, based on both the objective and subjective grounds, since investors are the humans. This is a qualitative research based on extensive literature review and develops a framework useful for future investors. This study explores the impact of perceived and actual financial literacy on financial risk tolerance and investment decision-making behavior of individual investors. Study also identifies the role of financial risk tolerance between the relationship of financial literacy (perceived and actual) and investment decision-making behavior. Based on extensive literature review, study concludes that harmonization among perceived and actual financial literacy of investors is necessary for making accurate decisions with minimum risk. Similarly, it identifies that high and sufficient financial literacy leads to better financial risk tolerance ability, therefore investors invest in risky securities confidently. Furthermore, study is a guideline for investors, professionals and households for improving their financial literacy. Also, it helps investor to identify level of financial literacy they required to deal with risky financial conditions and for making healthy investment decisions. Finally, study will help investors to make true evaluation of their actual financial knowledge to avoid overconfidence, a negative predictor of decision-making behavior.

Keywords: *Financial Risk Tolerance, Investment Decision-making Behavior, Actual Financial Literacy, Perceived Financial Literacy.*

1. Introduction

Investment decision-making behavior has immense importance for investment activities which is impacted by various factors. This behavior varies from individual to individual; therefore, they behave and react differently. While making their investments, some people follow the judgments, some rely on personal financial conditions / savings and some consider several other factors (1, 2). Investors including ordinary private households, retail/equity investors and financial professionals have encountered various challenges i.e. multifaceted financial environment, complex financial products, choice overload, instantaneous markets outbreak, risk, and ambiguity over the years (3, 4). Therefore, investors must have the ability to manage the risk and complexities associated with financial decisions which leads to greater financial returns. Conversely, the decision based on misleading or poor financial information or knowledge may lead to risky and flawed outcomes (5).

Financial literacy is valuable and emerged as substantial need for investor's decision-making over the years. It is a specific knowledge unlike the general knowledge of financial products (6). It is also the capacity for effective wealth management and informed financial decision-making (7, 8). Similarly, Gouws and Shuttleworth (9) revealed that financial literacy is the basic skill needed for making accurate and informed investment decisions at individual and organizational level. Likewise, financial literacy provides better expertise to analyze and perform financial actions i.e. investment opportunities, investment decisions and saving (10-12). Investment decisions of investors have been immensely influenced by financial literacy because it develops financial understanding, product knowledge, confidence for market participation and decision-making capability (13-15).

Recently, two main dimensions of financial litercy has been discussed in the literature i.e. pervieved and actual. In this purview, Allgood and Walstad (16) stated that perceived financial literay is the self-assesment of one's financial knowledge, whereas actual financial liteacy is individual's perfect stored financial knowledge. Authors added that perceived financial literacy has emormous importance in determining the financial behavior like actual financial literacy. Perceived financial literacy is a self-trust and believe of an individuals on their own financial knowledge (17, 18). It is positively associated with actual knowledge (17-19). Perceived financial literacy is not only the proxy of actual financial knowledge but also measures individual's financial confidence and trust. However an individual with higher level of perceived financial knowledge and lower level of actual financial knowledge might be considered as overconfident (16, 20). Larson, et al. (21) investigated concluded that individuals have low confidence in their knowledge are avoiding risk. Similarly, investors' involvement in stocks, bonds and other securities is largely dependent upon actual knowledge and perceived financial literacy.

Risk is inherent feature of investment decisions. So, risky investment decisions may produce gigantic results in term of profit and loss. Similarly, less risky investment decisions usually lead to nominal gains and losses. Literature revealed that good and informed investment decision immensely depends upon sufficient knowledge of product and financial environment (22). Therefore, risk is supposed to be the significant factor employing influence on financial risk tolerance and investment decision-making. As stated by Lodhi (23), financial literacy and risk-taking ability are positively related. Hence, financial knowledge of an individual enhances the capability of handling investment risk. Accordingly, financial literacy has significant impact on risk perception, as financial knowledge reduces the perceived investment risk (22). In view of this discussion, it has become imperative to examine the relationship of financial literacy, financial risk tolerance and decision-making behavior among individual and other type of investors (24-26).

Arrondel, et al. (27) measured financial literacy in France and revealed that most of the respondents do not have knowledge about the basic concepts of finance like compounding of interest, risk diversification and inflation. Authors added that only one third of the respondents have answered correctly to compounding of interest, risk diversification and inflation questions. They further concluded that some demographic groups had weak financial literacy than their counterparts such as young adults, females, aged people, and less educated individuals. Agarwalla, et al. (28) also measured financial literacy in India and considered inflation, risk diversification and interest compounding for measurement of actual financial literacy in three demographic groups including young working adults, retired people and students. They found that even basic financial knowledge; especially compound interest rates, impact of inflation on rates of return and the role of diversification were not well understood among Indian investors. Allgood and Walstad (16) emphasized that investigator must measure both forms of financial literacy i.e. actual and perceived to examine the accurate impact of financial literacy on individual investment behavior.

Factors influencing investment decision-making behavior are to be investigated as economic and political uncertainty is prevailing in developing countries over the decades, which has put investors under very protective and defensive mode. Therefore, investors are extremely conscious to invest particularly in stock markets. So, it is imperative to investigate the factors influencing the investment decision-making behavior. There are many factors e.g. individual’s saving, personal financial condition, level of income level, academic qualification and financial knowledge risk taking ability influencing decision making behavior of investors. However, current study intends to explore perceived and actual financial literacy and how these influence the level of financial risk tolerance and investment decision-making behavior of individual investors. Considerable research on financial literacy has been found in different countries especially developed countries. For instance, subsequent researchers explored financial literacy and its significant positive impact on decision of investors in US, Europe, Japan, New Zealand, Germany, Italy, China, UAE and India (12, 29-36). However, investigation of financial literacy in term of perceived and actual and its impact on individual investors is still unexplored. Nevertheless, very few studies have been conducted only on basic financial awareness at individual level and found very far from the required level (23, 37-39).

In view of the studies discussed earlier, what is not yet explored is the impact of overall financial literacy i.e. perceived and actual on financial risk tolerance and investment decision-making behavior. Therefore, this study explores the impact of perceived and actual financial literacy on financial risk tolerance and investment decision-making behavior of individual investors.

This study will be a guideline for individual investors, institutions and policy makers helping them how they can make better financial decisions with enough financial literacy. Moreover, it will help individual investors to enhance their financial literacy and how to make its best use to handle the risk bearing capacity and to make right/healthy investment decisions.

2. Literature Review

2.1 Financial Literacy, Financial Risk Tolerance and Investment Decision-Making Behavior

Financial Literacy is the capability to analyze financial issues, anticipate the future and react skillfully to life events that influence everyday financial choices (10). Similarly, it is the ability of an individual for making well-versed judgments and healthy decisions regarding his/her wealth (8). Financial literacy is very crucial because people who earn money are always potential savers and potential savers are good potential investors, so all investors must be equipped with financial literacy (40, 41). According to Hassan Al-Tamimi and Anood Bin Kalli (35), financial literacy is imperative for many groups i.e. financial institutions, public and private organizations and entrepreneurs for better investment decisions. It has focused on several financial concepts i.e. understanding of capital budgeting, knowledge of financial products, risk diversification, risk tolerance and solution of financial issues for attainment of financial targets (24, 42-43). Therefore, financial education and academic education have parallel importance. Adequate financial knowledge can help to manage wealth more effectively (12, 14, 44, 45).

Considerable number of studies have examined financial literacy in developed and developing countries. Exclusively, researchers focused on developed markets i.e. US, UK, Europe, Sweden, Australia, Itlay, Denmark, Germany and New Zealand (16, 32-33, 46-55), and generally found low level of financial literacy which influences investors decisions. On the other hand, some researchers also focused on developing markets like Pakistan, China, Vietnam, UAE, Malaysia, Nigeria, India and Sri Lanka (34-36, 39, 56-58). Review of past investigations indicated that number of investigations in developing countires is lower than the developed countries. Researchers generally explored basic financial awareness of the investors and concluded that investor’s financial knowledge is far from the required level (23, 37-39, 59).

To the end, previous investigations indicated that generally researchers explored financial liteacy’s decriptive nature or actual/objective form, whereas emprical nature and preceived/subjective form remained unaddressed. Alternatively, Allgood and Walstad (16) stated that real or accurate impact of financial literacy on financial decisions and risk behavior can only be examined through its perceived and actual (what people know and what they think they know) forms. Therofere, Allgood and Walstad (16) used two dimensions for measurement of financial literacy i.e. perceived and actual to assess the accurate impact of financial literacy on investment management i.e. valuation of risk and return on investment, maintenance of emergency funds and credit / loans management.

2.1.1 Perceived Financial Literacy, Financial Risk Tolerance and Investment Decision-Making Behavior

Perceived financial literacy is one's self-assessment about his/her knowledge of finance. Also, it is self-believe of investors on their financial knowledge for making financial decisions (17, 18). Perceived approach is used by many social scientists. For instance, this approach is being used in political science to evaluate the viewpoint of public about forthcoming polls and to judge voting behavior of the people (60, 61). Similarly, medical doctors use valuation forms for getting feedback of patients on perceived or subjective notions i.e. pain (62) and to measure patients' numeracy (63). Likewise, investigators focusing marketing research and consumer behavior have also utilized perceived knowledge approach for their studies (18, 64, 65). Accordingly, Allgood and Walstad (16) demonstrated that perceived approach is a way to judge investors self-assessed financial knowledge and confidence on their financial awareness.

In additon, Allgood and Walstad (16) stated that perceived financial literacy has equal importance in defining financial behavior of the individual investors like actual financial literacy. Added that percieved and actual financial literacy collectively have huge impact on financial wellbeing of investors. Moreover, perceived financial literacy is positively associated with actual financial literacy (17-19). Further, Parker, et al. (20) indicated that perceived knowledg of finace and economics has positive associaton with retirement planning. It is not only the proxy of actual financial literacy but indicates confidence and trust of individual investors for financial activities. Though, an investor with high perceived and low actual financial literacy might be overconfident (16). Generally, overconfidence investors believes that have extra ability to predict future stock prices than the others, tuhs choose risky stocks (66, 67).

Perceived and actual financial knowledge are mostly interconnected and this interconnection or correlation is usually best or moderate. Agnew and Szykman (68) find moderate correlations between perceived and actual financial literacy. According to Allgood and Walstad (16), individuals with sufficient or high perceived financial literacy are more tended to invest in stocks and bonds than the individuals with low perceived financial literacy. Also, the investors having high perceived financial literacy are more confident in market participation and investing activities. Keeping in view the discussion, it is obvious that perceived and actual financial literacy have parallel importance for investment decision-making behavior of investors. Following hypothesis can be developed on the basis of previous literature.

H1: Perceived financial literacy has positive impact on financial risk tolerance of individual investors.

H2: Perceived financial literacy has positive impact on investment decision-making behavior of individual investor.

2.1.2 Actual Financial Literacy, Financial Risk Tolerance and Investment Decision-Making Behavior

Actual financial literacy is one's actually knowledge of finance unlike perceived knowledge (64). Similarly, actual literacy is also individuals real stored knowledge of finance (17). Accordingly, actual knowledge is the degree of confidence on one's financial ability for making accurate financial decisions (17-19). Whereas, confidence has positive association with financial planning and investment decisions (20). It is also the understanding of basic financial concepts i.e. simple and compound interest. risk diversification, inflation and time value of money (11, 12). Larson, et al. (21) demonstrated that sufficient actual financial literacy is the main contributor in retirement planning and financial decisions. Insufficient level of financial literacy causes lack of confidence in individuals for making risky investment decisions.

Likewise, Lusardi and Mitchelli (69) investigated positive influence of actual financial literacy on credit management and investment activities. A study conducted by Arrondel, et al. (27) in France and revealed that majority of the individuals are unaware about the basic notions of finance i.e. simple/compound interest rate, inflation and risk diversification. For instance, one out of three respondents was able to answer correctly to risk diversification, inflation and interest compounding. Similarly, young adults, females, aged people, and less educated individuals had very low financial knowledge. Allgood and Walstad (16) and Parker, et al. (20) found that retirement planning and investment behavior has positive relation with financial literacy.

An eminent study conducted by Lusardi and Mitchell (12), Lusardi and Mitchell (48) documented some exciting results about perceived and actual financial literacy. Authors demonstrated that a huge gap exists between individual's perceived and actual financial literacy. For example, various surveys conducted in US, Netherlands and Germany revealed that individuals are normally pretty confident about their knowledge of finance, whereas their actual knowledge of finance was very low. Generally, perceived and actual financial literacy are interlinked. Agnew and Szykman (68) revealed that there is a moderate correlation between perceived and actual financial knowledge.

In view of discussed literature, it is obvious that both forms of financial literacy i.e. actual and perceived are very essential for making investment decisions. Also, the level and impact of financial literacy on investor's decision making cannot be measured accurately without gauging both dimensions. Literature is also evident that mostly researchers emphasized on basic actual financial literacy, whereas advance actual and perceived financial literacy remain ignored. Measurement of only actual financial literacy through basic financial concepts and then apply the same to investigate its impact on investors behavior may understate the influence. Therefore, both actual and perceived (i.e. what people know and what they think they know) forms should be used to gauge the factual impact of financial literacy on investor behavior (16).

H3: Actual financial literacy has positive impact on financial risk tolerance of individual investor.

H4: Actual financial literacy has positive impact on investment decision-making behavior of individual investor.

2.2 Financial Risk Tolerance as Mediator

Risk is the difference between expected and actual return on investment. Risk is an inherent feature of financial decisions, therefore both are interconnected (70). Various domains of risk are examined by the social science researchers i.e. social risk, psychological risk and financial risk (71, 72). Additionally, various expressions of financial risk are also explored by the researchers in the literature such as risk assessment, risk propensity, risk attitude, risk aversion and finally the center of current study, financial risk tolerance. Literature revealed that there is no standardized interpretation of financial risk tolerance (73). However, a largely acceptable definition of financial risk tolerance presented by Grable (74) is "the utmost level of uncertainty that individuals are agreed and willing to accept while making their financial decisions". Considerable amount of studies has discussed financial risk tolerance in different contexts e.g. (71, 74-87).

Investors, investment advisors, policy makers and researchers are dealing with complex and increasingly changes investment environment these days. Therefore, it is significant to investigate that how financial risk tolerance contributes in making investor behavior (74). According to Hanna and Chen (82), gain or losses on investment and increase or decrease in wealth has direct positive relationship with risky investment decisions. Moreover, Roszkowski and Davey (88) stated that financial risk tolerance reduces investors frustration and increases confidence in making better financial decisions. Similarly, investors assess expected risk and return on investment as per to their preferences. However, their risk perception related to investment decisions is still dependent upon the prior financial investment experience of making loss and profit (89, 90).

In case of financial risk tolerance and financial literacy, Masters (91) identified that risk tolerance is hugely influenced by adequate or inadequate financial literacy level of investors, as high financial knowledge leads to better risk-taking capability. Moreover, Sachse, et al. (22) argued that financial literacy has enormous impact on risk perception of investors. Furthermore, Lodhi (23) found a positive association of financial literacy with risk-taking aptitude because financial awareness increases willingness to opt risky portfolios (23). In addition, Olson (92) stated that usually investors with low financial literacy commit mistakes in diversifying risk and may decrease one-fifth of their retirement income. On the other hand, Van Rooij, et al. (14) stated that investors with sufficient financial literacy have gigantic chances of accumulating more wealth. Further, such investors have better risk tolerance ability for getting positive returns on equity investment.

Several other researchers also examined the relationship between risk-taking behavior of investors and financial literacy and displayed different results (26, 93, 94). For example, Sjöberg and Engelberg (26) concluded that investors having enough financial literacy are can handle risk more effectively than the others. However, influence of actual and self-assessed (perceived) financial knowledge on risk taking behavior largely remained untapped by the behavioral researchers. In this vein, Huzdik, et al. (25) carried out a study to investigate the impact of perceived financial literacy on financial risk tolerance but were unable to identify to what extent investors are influence by financial risk tolerance. Awais, et al. (70) and Bashir, et al. (95) stated that individual investors face extreme environmental risk which becomes more dreadful due to insufficient financial awareness of investors.

H4: Financial risk tolerance mediates the relationship of financial literacy (perceived and actual) and investment decision-making behavior.

3. Methodology

Based on hypothesis, a theoretical framework has been developed indicating direct, relationship of financial literacy (perceived and actual) on financial risk tolerance and investment decision-making behavior. Moreover, model demonstrates the mediating role of financial risk tolerance between financial literacy (perceived and actual) and investment decision-making behavior.

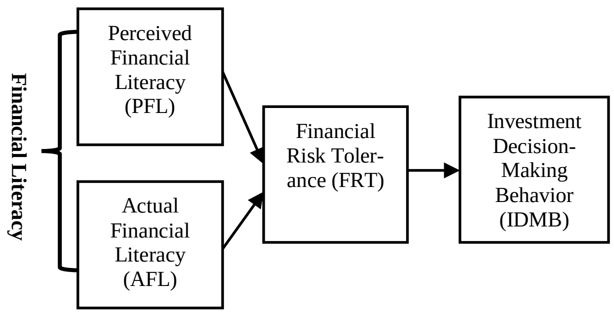

Fig. 1: Theoretical Framework

4. Conclusion

Based on comprehensive literature review and past evidences, this study stabs to develop a theoretical model that will be beneficial for the investors, particularly individual equity investors for making good/healthy investment decisions and designing perfect portfolios. Investors can design perfect investment portfolios and make correct decisions only when they properly identify the influence of all confounding variables on their decision-making behavior. Because these variables direct the investors for making informed and educated investment decision, therefore they can minimize risk and accumulate more wealth. Past investigations documented that investors are facing highly multifaceted issues i.e. risk, uncertainty and overloaded investment options while making investment decisions. Hence, these issues are immensely influencing investment decision-making behavior of investors.

This study identified the enormous importance of financial literacy (actual and perceived) for individuals and its huge significance for decision-making behavior of investors. As, low financial literacy makes investors incapable, under confident and risk averse (11, 12). Investors have to chase the risks associated with their day to day financial decisions. Therefore, higher financial literacy and perfect synchronization between actual and perceived financial knowledge is very important as it leads to financial risk tolerance, so investors choose risky securities to design an investment portfolio. Conversely, low and unsynchronized financial literacy (high perceived low actual, low perceived and high actual) makes investors over or under-confident. Therefore, investors have huge intensity to over or under-estimate the financial risk which may lead to wrong and ambiguous financial decisions. As stated by Allgood and Walstad (16), high perceived and low actual financial literacy leads to overconfidence of investors. Accordingly, literature revealed that overconfidence is a negative predictor of decision-making behavior. Hence, current study concluded that mismatch between actual and perceived financial literacy has negative impact on decision-making behavior of investors.

Furthermore, an investor with higher financial literacy and a good skill of its application on financial decision-making can opt for extremely risky investments for the sake of high returns. Current research is valuable as it explored the role of financial risk tolerance between the relationship of financial literacy and investment decision-making behavior. This study also explored that perceived financial literacy as self-assessed financial knowledge and actual financial literacy as actual skill of financial concepts i.e. simple and compound interest rate, inflation, risk diversification has huge impact on investor's decision-making behavior. Coupled with, financial literacy i.e. actual and perceived helps investors for making suitable and correct investment decisions with minimum risk factor.

5. Future Implications

This is also a groundbreaking study for the forthcoming researchers for measuring perceived and actual financial literacy of individual investors. Also, a guideline for the investigators to analyze the impact of various other factors along with financial literacy (perceived and actual) and risk as mediator on individual investors decision-making behavior. It will also support investors regarding level of financial literacy required to deal with risky conditions and for making better investment decisions. Further to this, study will help investors to perfectly evaluate their actual financial knowledge to refrain from overconfidence, a negative predictor of investment decision-making.

Formerly, survey questionnaires are utilized as a tool to measure financial literacy, therefore future researchers can use some other mechanism and method for measuring overall financial literacy to authenticate the results. Qualitative approach i.e. interviewing the individual investors to get better insight regarding their previewed and actual financial literacy can be utilized. Moreover, study can also be carried out on institutional equity investors, as they are the dominating group of investors in stock markets.

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