



BEHAVIORAL BIASES AND THEIR IMPACT ON FINANCIAL PERFORMANCE IN THE CONTEXT OF FINANCIAL LITERACY: A LITERATURE REVIEW

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Article history:	Abstract:
<p>Received: April 6th 2022 Accepted: May 6th 2022 Published: June 14th 2022</p>	<p>The main objective of the study is to systematically review literature that addressed behavioral biases and their relationship to financial performance in the presence of financial Literacy or not, focusing on the main gap in current studies, and then looking for Findings that achieve the best level for selected study. We used the inductive approach by conducting a comprehensive survey on published articles for the period (2009-2021), which requires determining the goals and findings. After identifying the literature that reviewed the variables of the study, it was concluded that most of the findings indicate that behavioral biases affect financial performance, while financial literacy improves the level of performance. The researchers found that none of the previous studies focused on the above-mentioned variables in the Iraqi banking sector.</p> <p>Contribution / Originality</p> <p>The study provides a literary review in the search for the gaps that were not addressed, then to come up with the results that represent the general orientation of researchers in the methods used when analyzing and modeling this relationship among important variables. It is worth mentioning that studies at the local level are rare in this aspect.</p>

Keywords: Behavioral Finance, Emotional Biases, Cognitive Biases, Investment Decisions, Decision Makers, Financial Literacy

1. INTRODUCTION

The development and strengthening of the position of the behavioral economy in the field of scientific development have led to the emergence of new branches, including the so-called Behavioral Finance, which aims to integrate psychological aspects of the decision-making process by focusing on financial decisions and financial markets (Muradoglu and Harvey, 2012: 68). Some have expanded the concept of behavioral finance to be viewed from two angles (Bikas, et. al, 2013: 871) macro behavioural finance (which reveals anomalies in market efficiency hypotheses that can be interpreted through behavioral models), and micro behavioural finance (which analyzes the behavior and deviations of investors and this distinguishes them from rational individuals and can be explained through statistical models and methods).

Studies conducted by Tversky & Kahneman show that

economic agents tend to simplify the decision-making process by using "mental shortcuts" or "heuristic" from their past experiences that may lead them to a range of emotional and cognitive biases (de Arruda, et.al, 2015: 205). It can be seen that Financial Literacy is evident in overcoming the negative impact of faulty heuristics. As a result, the decision-makers can improve their level of financial performance.

Recent studies indicated that the reason behind the weak participation in the stock market is attributed to demographic and social factors as well as the lack of awareness and appropriate financial knowledge of investment (Kadoya, et. al.2017: 3). In contrast, economies around the world considered that increasing financial literacy is a cornerstone for developing the country's financial system through providing individuals with the information, basic knowledge and skills needed to assess their choices and enabling them to understand the implications of



alternative financial decisions (Arora & Marwaha, 2013: 242).

2. THEORETICAL REVIEW

2.1. Behavioral biases

Simon argued in classic economic thought that individuals are constrained by the human mind according to cognitive and emotional boundaries and that there are several terms used to describe some behavioral biases in the decision-making process (Muller, 2015:3), which are related to the decision-makers' tendency to make irrational decisions because of irrational misperception or emotionally influenced logic (Athur, 2014:2).

Shefrin, in 1985, defined bias as a tendency to error or, in other words, a pattern of deviation of governance under certain circumstances and attitudes. Behavioral specialists assert that humans are either partially rational or irrational when exercising individual investment decisions and that many behavioral biases affect on investment decision-making, encouraging investors to move away from rationality and make irrational investment decisions (Madaan and Singh, 2019:56), Behavioral finance researchers and scientists seek to classify the behavioral biases that Kahneman has divided into three types: judgment biases, preference mistakes, and self-reported biases (Pompian, 2006:33).

Shefrin classifies biases as Findings from heuristics and framework dependencies, but the most interesting classification of scientists are the two categories of cognitive biases and emotional biases (Mushahid and Yadav, 2016: 5), (Addo, 2019: 7), (Athur, 2014: 2). Cognitive biases are caused by misunderstanding of data, thinking mistakes, computational mistakes, or memory mistakes that can be corrected, whereas emotional biases come from feelings, intuition, and impulsive thinking (Mahashid and Yadav, 2016:5) (Pompian, 2006:44), these biases are difficult to be corrected but can at least be mitigated if individuals know that the problem already exists and believe that it is more harmful in the long run to the performance investors.

On the positive side, behavioral biases contribute to the processing of information to reach appropriate decisions and preferences, as they tend to be existing deeply within the human mind and may serve them in certain circumstances (Simonova, 2015: 7). People's understanding of biases' effects on the investment process will give better economic findings, and simply identify behavioral biases in a timely manner can save decision-makers from potential financial disaster and

improve those investment decisions (Mittal, 2019: 3). As for experienced investors and advisors, they will be better through providing service to their clients and educating them about anomalies and cognitive and emotional errors (Leković, 2020: 78).

2.2. The Concept of Financial Literacy

The concept of financial literacy has received a lot of attention recently, especially after the financial crises in 2008, and the rapid developments at the level of finance and investment technologies and means to receive the attention of governments, bankers, employers, financial market operators, and other systems, especially in developed countries whom realized their need for this concept due to the development of financial products, the complexity of financial markets and demographic, economic, political and social changes among the decision makers (Mian, 2014: 313).

National Financial Educators Council (NFEC) defines Financial Literacy as having individuals the skills and knowledge of the financial matters needed to make effective decisions that meet both individual and community goals (Delgadillo, 2014: 19). The President Advisory Council on Financial Literacy (PACFL) defined it as the individual's willingness to take advantage of his or her literacy and capabilities to deal effectively and efficiently with his financial resources during his lifetime to achieve his financial well-being (Mian, 2014: 314). The OECD referred to the term Financial Literacy as a combination of knowledge, skills, attitudes, and behaviour necessary to make sound financial decisions that achieve financial well-being (It is for the individual to feel safe towards their financial future) (OECD, 2014: 32)

Financial Literacy is indicated the positive aspect of investors, managers, and consumers by enhancing their capabilities and culture in assessing risks and opportunities and identifying vital financial issues and behaviors that support effective management of financial resources, thus providing the ability to understand important products including various banking products, investments, savings and pension plans (Ishtiaq, et al., 2020: 3).

2.3. The concept of financial performance

Financial performance is linked to the effectiveness and success of the company or organization's activities, reflecting the effectiveness of management and its success in achieving the goals it pursues and maintaining its competitive position in volatile business environments and challenges at different levels (Majeed & Mohammed, 2018: 589).



Performance, in general, is based on two key elements: efficiency (which means experience and skill in achieving the required goals), and effectiveness in performing tasks in the best way through the optimal utilization of available resources (Aguinis, 2012: 387).

Financial performance was defined by many researchers and academics and by different definitions including (Ramachandrandr, et.al, 2019: 597) as: the outcome or the last findings through which the company's strengths are identified, strengthened, identified, and overcome, while Kader (2019: 10) defined it It is described by Kader as a measure that assesses a company's quality by utilizing its resources within its business style and generating revenue over a certain time period. which in turn reflects the payment of its obligations and competition with similar companies.

2.4. The relationship between financial literacy, behavioral bias, and financial performance

Behavioral biases and financial literacy are important pillars for verifying the behaviors and financial understanding of managers and investors alike. Previous studies have indicated that most of their decisions include biases that affect their financial areas (Wangzhou, et. al., 2021: 5). According to Lusardi and

Mitchell, the ability of investors to specify how to manage money and use it to achieve maximum profits is mainly due to the degree of financial Literacy that they own, and if it is high, it will contribute to a better understanding of financial products and services, which are likely to improve the level of financial performance (Lusardi and Mitchell, 2011: 7-8), otherwise, a decision-maker with low financial literacy skills will, in many situations, rely on advisors and friends when facing a particular decision and, thus, may be subject to fall into herd behavior bias. (Novianggie & Asandimitra, 2019: 97). Moreover, highly educated investors were found to prefer using different techniques when making their financial decisions compared to low-literacy investors, which is why many decision-makers face a range of behavioural biases that affect their financial performance in the company or facility in which they work (Khalid, et. Al, 2018: 36)

3. RESEARCH GAP AND SYSTEMATIC REVIEW

In this section, the gaps in the literature that deal with the relationship between behavioral biases and financial performance will be discussed and identified in the light of the moderating role of financial literacy, in terms of the objective and findings of the study and the method used in the study sample as in the table below:

Table 1: Systematic Review of Literatures on the Link between behavioral bias, financial performance and financial literacy.

Authors	Study Objective	study sample	Study Instrument	Findings
Hussein, 2009	Assess the financial literacy of the UAE individual investors who invest in the local financial markets.	A convenient sample of 290 of UAE national investors is used.	Primary Data-Questionnaire	The Findings indicate that the financial literacy of UAE investors is far from the needed level.
Athur, 2014	The objective of the study is to determine the effect of behavioural biases on investment decisions of individual investors in Kenya.	This study generalizd the findings to individual investors in Kenya from 30 respondents.	Primary Data-Questionnaire.	Statistically correlations suggest that these dimensions of behavioural factors influence individual investor decisions.



Adomako & Danso,2014	Examine the performance implications of financial capital availability and resource flexibility on the financial literacy-firm performance relationship of entrepreneurial firms operating in a less developed market setting.	The use of 969 firms of entrepreneurial firms operating in Ghana.	Primary Data-Questionnaire.	Our findings indicate that financial literacy improves corporate performance especially when resources are flexible and entrepreneurs are able to access finance easily.
Muller, 2015	Determine the behavioural biases of South African collective investment scheme managers in a decision-making context.	This research's entire population consists of 102 individual CIS managers.	Primary Data-Questionnaire.	The findings indicate that effective management does suffer from overconfidence and loss aversion and does not appear to suffer from frame dependence or over-optimism.
Aren & Aydemir, 2015	This study intends to examine whether financial literacy moderates the relationship between risk averseness in general, locus of control and risky investment intention.	The study sample comprised 112 encompasses mostly postgraduates and personnel in a university.	Primary Data-Questionnaire.	It is clearly demonstrated that risk averseness and financial literacy level had an impact on the risky investment behavior represented by behavior intention.
Adomakoa et al, 2015	This study draws on a resource-based view to introduce financial literacy as a moderator of the relationship between access to finance and firm growth.	The use of data from 201 small and medium-sized enterprises in Ghana.	Primary Data-Questionnaire.	Our empirical findings suggest that financial literacy positively enhances the access to finance-firm growth relationship.
Patrick, 2015	To examine the effect of financial literacy on performance of Small and Medium Enterprises in Trans-Nzoia count	A sample of 85 SMEs was selected.	Primary Data-Questionnaire.	This study concludes that there is a strong positive effect of financial literacy on the performance of SMEs.



Fernandes, 2015	Assess the financial literacy levels of small business owners and analyze the relationship between these Findings and the operating performance of those companies.	The sample in this study is composed of small businesses of the North of Portugal.	Primary Data-Questionnaire.	The Findings indicate that there is a level of financial literacy among small business owners of the micro and small business in the North of Portugal.
Eniola& Entebang 2016	This study set to review the influence of financial literacy on the performance of the SMEs from Nigeria's context.	The small and medium enterprises (SMEs)	Theory review	Companies tend to have much higher rates of job growth, but also are more likely to go out of business or remain stunted due to institutional and financial literacy problems.
Hayat & Anwar, 2016	This study focus to check the influence of behavioral biases in investment decision-making with moderating role of financial literacy in Pakistan.	The sample included of 158 investors trading in Pakistan Stock Market.	Primary Data-Questionnaire.	The Findings show that financial literacy has negative moderating role in herding bias and a positive moderating role in overconfidence bias in the investment decision.
Nyakundi, 2017	The purpose of the study was to determine the effect of <i>managerial</i> behavioral biases on the ranking of financing decisions.	The top three financial managers from each of the 64 listed firms were included in NSE.	Primary Data-Questionnaire.	Findings depict that all the selected independent variables had a significant effect on the ranking of financing decisions by managers in firms listed in the NSE.



Rehman, 2017	the relationship of <i>managerial</i> biases(mental accounting, optimism and loss aversion) with corporate performance is investigated	The sample of The study consisted of eighty-five CEOs, CFOs, General Managers and Financial Treasurers of the nonfinancial sector (listed in Pakistan Stock Exchange).	Primary Data-Questionnaire.	The findings of the study depicted that behavioral biases influence corporate performance as managers take a decision under the influence of personal feelings, perceptions, and intuitions
Javed et.al., 2017	The main purpose of this study was to identify which biases impact more on PIP and to identify useful insights from the Findings of the study that may benefit in this discipline	The sample size for this study was determined from 220 investors in the Pakistan Stock Exchange (PSX).	Primary Data-Questionnaire.	The regression Findings found that the herding effects, overconfidence, availability bias and representativeness have a positive and significant impact on perceived investment performance.
Galstian, 2017	The aim of this study is to explore the relationship between the level of financial literacy of managers and entrepreneurs of small and medium-sized enterprises (SMEs) and its economic and financial performance.	The subsample is 297 SMEs in textile sector, 315 in Restaurants sector and to 216 for Accommodation services.	The use of a structured questionnaire , that is mostly similar to International Survey of Adult Financial Literacy Competencies from OECD in 2016	This data Findings suggest a moderate negative and statistically significant correlation between companies' performance (as measured by Return on Equity - ROE) and its owners' or managers' global FLL.
Ripain et al, 2017	Investigate the level of financial literacy among the participants, as the main objective of the case.	The sample of respondents in this study is the candidates of SMEs' entrepreneur.	Quantitative approach through questionnaire survey and interview.	It is found that the level of financial literacy among SMEs' players, particularly those selected to be nurtured as new entrepreneurs, is still alarming.



Alrabadi et al.,2018	This study investigates the existence of behavioral biases in Amman Stock Exchange and their effect on investment performance from investor's point of view.	The sample of the study consisted of 242 from the investors in Amman Stock Exchange	Primary Data-Questionnaire.	The Findings show that there is a statistically significant effect of overconfidence bias, familiarity bias, availability bias, representativeness bias and herding bias on investment performance ($p \leq 5\%$).
Mabula&Pin g, 2018	Analyze financial literacy impact on access and actual use of financial services and its ultimate consequential reflections on SMEs performance in developing economies.	The sample was composed of SMEs managers from the region of Morogoro and Dar es Salaam from Tanzania.	Primary Data-Questionnaire.	The study reveals a significant positive impact of financial literacy on the financial access and the performance of the firm.
Khalid et al, 2018	The objective of this study is to examine the Impact of Overconfidence bias and Herding bias on Investment Decision Making with Moderating Role of Financial Literacy.	The Sample was Investors, Employees and Graduate Students who invested in Islamabad Stock Exchange.	Primary Data-Questionnaire.	The Findings show that overconfidence bias and herding bias have a positive impact on investment decision making and Financial Literacy has a positive impact on investment decision making.
Baig et al, 2019	They find that the behavioral biases have an impact on the firm's performance and managerial, and financial decision-making process through the mediating role of entrepreneurial innovations.	Data were collected from 109 respondents which include entrepreneurs and managers from nonfinancial firms of Pakistan.	Primary Data-Questionnaire.	The finding shows that innovative organizations often predict the low tendency of overconfidence and usually are risk-averse in their financial decision.
Arinda, 2019	The study sought to examine the effect of financial literacy on the financial performance of small and medium enterprises.	A sample of 97 SMEs was selected.	Primary Data-Questionnaire.	The study concludes that financial literacy significantly affects the financial performance of SMEs.



Menike, 2019	The purpose of this study is to investigate the effect of financial literacy on the performance of Small and Medium Enterprises (SMEs) in Sri Lanka.	The study analyzed the SME owners' financial literacy.		The Findings show that financial knowledge, financial influence, and financial behavior have a positive impact on their firm performance.
KMMCB et al, 2019	Test the impact of financial literacy and risk attitude on SMEs performances in an integrated model.	The sample includes 244 chief financial officers of SMEs.	Structural equation model.	The output of the structural equation model revealed a direct positive effect of financial literacy and risk attitude on SMEs performances.
Novianggie et al, 2019 Variable	Know the influence of behavioral bias, cognitive bias, and emotional bias on investment decision, with financial literacy as a moderating variable.	Use 212 respondents from a college student in Investment Gallery Surabaya.	Use a questionnaire, limited interview, and multiple regression analysis.	The Findings indicate that herding bias, risk perception, overconfidence, representativeness, and financial literacy have a significant impact on investment decisions.
Jemutai et al, 2020	This study aimed at determining the moderating effect of financial literacy on the relationship between overconfidence bias and investment decisions among Small and Micro Enterprises.	The study used a stratified and random sampling technique to select a sample size of 383 participants from entrepreneurs.	The study used quantitative data to establish direct and moderating effect of the variables under study.	Findings from hierarchical linear regression revealed that financial literacy moderates the relationship between overconfidence and investment decisions.
(Sattar et al, 2020)	The study shows how behavioral biases affect investment decision-making under uncertainty.	The investors and financial institutions.	Primary Data-Questionnaire.	Findings revealed that there is an effect of behavioral biases on investment decisions.
Ishtiaq et al, 2020	The study attempt to examine the direct influence of financial literacy on financial performance.	The market of small Pakistani and medium-size enterprises (SMEs) market.	Primary Data-Questionnaire.	The Findings indicate that financial literacy influences resource acquisition and financial performance.



Ahmad & Ali Shah, 2020	The study aims to show how overconfidence influences the decisions and performance of individual investors trading on the Pakistan Stock Exchange (PSX), with the mediating role of risk perception and moderating role of financial literacy.	The sample included of 183 individual investors trading on the PSX.	Questionnaire and cross-sectional design were employed for data collection.	The Findings suggest that overconfidence can impair the quality of investment decisions and performance, while financial literacy and risk perception can improve their quality.
Gusman at al, 2021	Analyze and reduce the rate of failure of SMEs in Indonesia by pursuing the defined determinants from their behavioral traits and self-knowledge on financial understanding in decision making.	The sample includes 482 SMEs.	Primary Data-Questionnaire.	The findings show that the financial literacy, confidence, impulsivity, and financial act of the founders, significantly impact the soundness of SMEs.
Wangzhou et al, 2021	Assess the effects of regret aversion and information cascade on investment decisions while considering the moderating role of financial literacy.	The sample included 200 real estate investors.	Primary Data-Questionnaire.	The Findings confirmed that financial literacy weakens the negative effect of behavioral biases (regret aversion and information cascade) on investment decisions.
Purwidianti et al, 2021	The study examines the effect of financial literacy and financial experience on financial performance using financial behavior as a mediator.	The sample includes 91 SMEs located in Purwokerto, Indonesia.	Primary Data-Questionnaire.	This study provides evidence of the positive effect of financial literacy on SMEs financial behavior and financial performance.

According to the studies mentioned above, it seems that they did not address the banking sector as a sample, but were limited to investors, companies and graduate students. In addition, the studies did not use the quantitative method in analyzing the data, but rather all relied on questionnaire models when describing the Findings.

4. CONCLUSION

When tracking the behavioral literature to explain the

biases and their relationship to the financial performance of decision-makers in the financial fields, it was described the frequent deviations that all affect the optimal financial decision-making in light of risks and uncertainty. These individuals are usually restricted because of their tendency to fall into emotional and cognitive biases when processing financial information in an irrational manner, and this requires knowledge of a high level of financial literacy to reduce or eliminate biases and this was confirmed



by most of the studies referred to in the table (1). This indicates that the Findings were denoting that behavioral biases weaken the level of financial performance, while financial literacy improves it. The Findings of previous studies also showed the positive and moderating impact of financial literacy on behavioral biases and their relationship to the financial performance of small and medium-sized companies.

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