Full Length Article

Impact of Overconfidence Bias on Investor's Investment Decisions: The moderating role of Religiosity

Shahid Hussain[1], Abdul Rasheed[2], Muhammad Arsalan Ali[3]

[1]*Ph.D Scholar, Deptt: of Management Sciences, Khwaja Fareed University of Engineering and Information Technology (KFUEIT), Rahim Yar Khan, Pakistan*
[2]*Assistant Professor, Deptt: of Management Sciences, Khwaja Fareed University of Engineering and Information Technology (KFUEIT), Rahim Yar Khan, Pakistan*
[3]*Khwaja Fareed University of Engineering and Information Technology (KFUEIT), Rahim Yar Khan, Pakistan*

A B S T R A C T

This study examined the level of psychological factors (overconfidence) that affect investor decision-making processes. The main purpose of the current study is to explore the impact of psychological factors on investor decision-making. To achieve this goal, this study used measurement and design of a separate study. Research Survey has been used to collect data. Questionnaires are still being distributed to individual investors and stockholders in Pakistan. Smart PLS-SEM 3 was used for data analysis. It has been found that overconfidence has a major impact on investor investment decisions. In addition, it is investigating that Religiosity has a significant and positive impact on investors' investment decisions. Moreover, it is also found that overconfidence has a positive and significant impact on investors' decisions with the moderating role of Religiosity. In particular, the current study investigated the moderating impact between overconfidence bias and decision-making by investors. The present study's findings may be essential in understanding investor behaviour and may apply to academics and practitioners.

Keywords: Investment decisions, Overconfidence Bias, Religiosity, PLS-SEM.

1. INTRODUCTION

Behavioral Finance is one of the latest ways to make investment decisions that have changed in response to the challenges experienced by the standard model. Broadly speaking, it says some traders were completely unreasonable when making investment decisions (Abdelsalam et al., 2021). Ethical finance also describes how various psychological behaviors affect investors' behavior and management behavior during the decision-making process (Adekoya et al., 2021).

Investors' morale has remained at the heart of the investigators since the publication of Theory of Market (Afzali et al., 2021). There is a lot of criticism in the idea of investor behavior as a rational understanding of investor behavior is challenging to explain, because it often happens (Arora & Chakraborty, 2021). Behavioral funds provide a signal that a person's unpredictable behavior is reversed (Hussain et al., 2021). The many behavioral biases that investors indulge in during investing have been seen as necessary in providing a better understanding of the behavior of individual investors. Most investor behavior is influenced by overconfidence (Betzer et al., 2021).

Investors, influenced by overconfidence, exaggerate their skills and abilities, reduce risk and overstep their financial power (Brunen & Laubach, 2021). However, overconfident investors exaggerate the facts and figures they have collected, exaggerating their predictive skills, ignoring facts and taking unreasonable risks, depending on the cause (Brzeszczyński et al., 2021). Investors involved in affirmative bias confirm their existing beliefs and endorse previous views. Overconfidence and affirmative bias affect investor decision-making and change investor thinking. Religion is also one of the most important factors influencing the behavior of investors (Brzeszczyński et al., 2021). Although many factors have been studied in previous studies, no last effort has been made to examine the impact of religion on self-reliance and ensure investment and investment decisions, especially in the context of Pakistan (Abdelsalam et al., 2021). Therefore, there is a need to understand the impact of overconfidence, affirmative bias in investment decisions and how religion balances the impact of overconfidence on investment decisions. The study aims to address the gaps in the body of ethical financial information (Cabrera-Paniagua & Rubilar-Torrealba, 2021).

To achieve the above, we have conducted this research. The main purpose of this study was to examine the impact of religion on the relationship between these behavioral factors through investor decision-making processes. According to the authors, this is a pioneer study examining the impact of religion on behavioral bias and decision-making in the Pakistani stock market. The present study's findings may be very important in gaining a better understanding of investor behavior and may apply to academics and practitioners.

2. Literature Review

The literature review focuses on dynamic and theoretical studies on ethical thinking and their impact on investment decisions considered in the current study. Moral finance assumes that a person's behavior is influenced by emotions and cognitive errors when making an investment decision (Chakrabarti & Sen, 2021). These feelings and mental errors are behaviors that affect the behavior of investors. In the present study, we have tried to define the relationship between the two sides of the code, namely overconfidence, assurance bias and decision-making by investors (Demiralay et al., 2021).

Overconfidence bias is a behavior in which investors have an illicit belief in their ability to understand, evaluate, and know (Dyer, 2021). Overconfident investors exaggerate their knowledge and experience while minimizing the number of investment-related risks (Jiang & Hu, 2021). Often, overconfident investors look for their information indicators while looking for widely available information (Elgebeily et al., 2021). Gershoni & Low (2021)argue that overconfident investors during data search rely on their past investment knowledge and are overconfident and confronted with facts. Overconfident investors are involved in illicit trading.

Similarly, Khedmati et al. (2021) found that overconfident investors, trading in large amounts of money and because of many trades, returned before the transaction costs were deducted. In contrast, the return after subtracting transaction costs was worse (Menyeh, 2021). Maiti (2021)suggested that overconfident investors misinterpret this information and overstep their skills and competencies when analyzing investment information and making poor decisions about investment returns.

On the other hand, religion is another factor that influences investor decisions. At the time of the investment, most Muslim investors checked to see if the investment was in line with Islamic law (Reiter-Gavish et al., 2021). According to Tabe-Ojong & Nshakira-Rukundo (2021), religion serves as a building block in which people shape their habits and attitudes. Principles and religious responsibilities govern people's choices. People act according to their religious convictions when choosing money, cosmetics, food, and medical products. Among all the social issues affecting the feelings of the believers,

religion is one of the most important. Religiosity acts as an accountant who unites, divides and unites community groups (Wu et al., 2021). According to Xia et al. (2021) savings and investment activities may be limited and restricted by religious principles because religion has a philosophical influence on believers' traditions, ways, ideas, and morals. The impact of religion on values, cultures, attitudes, attitudes and behavior is determined by a wide range of subjects from a wide range of disciplines (Demiralay et al., 2021).

Religiosity shows a vital role in decision-making on risk attitudes Abdelsalam et al., (2021) conducted a study and argued that Jews invested in more risky investments and received higher returns on financial assets compared to non-Jews. Religion, therefore, influences the decisions of investors.
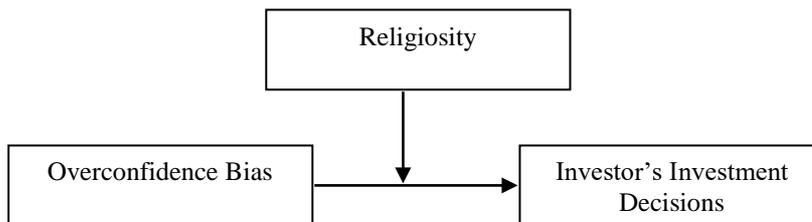

Figure 1.Theoretical Framework

H_1: *There is Positive impact of overconfidence on investors' investment decision making.*

H_2: *There is a positive association between overconfidence and investor's investment Decision making with moderation impact of Religiosity.*

H_3: *There is positive association between Religiosity and investors' investment decision making.*

3. Research Methodology

This study used the method of measurement and quantitative research conducted by the components. Research Survey has been used to collect data. Questionnaires are still being distributed to individual investors and stockholders in Pakistan through Google forms. A 5-point Likert scale was used to collect data, with 1 showing the results strongly disagree and 5 showing the results strongly agree. In addition, this study used a simple

sampling method for data collection.

Moreover, according to Comrey and Lee (1992) a sample size of 200 is sufficient for further analysis. Therefore, according to Comrey and Lee (1992), a sample size of 200 was chosen. However, Smart P.L.S. 3 was used for data analysis. The choice of Smart P.L.S. 3 is based on a low level of response. In the present study, 200 questionnaires were still being distributed. However, only 70 answers were obtained where 03 was incomplete and was not included in the study. Therefore, 67 valid responses were used to analyze the data. Smart P.L.S. is one of the most valuable tools when analyzing data from a low sample size. According to various studies (Lai, 2019; Ul et al., 2021) Smart P.L.S. is best suited for a small sample size.

4. Results and Analysis

4.1. Assessment of the Measurement Model

The measurement model is tested with Smart P.L.S. Algorithm. In this process, reliability and validity are tested. Internal consistency in loading has been tested to ensure convergent validity. In addition, Cronbach's alpha, combined reliability, intermediate output (AVE) and discriminative validity were also tested. The AVE and the composite reliability should be more than 0.5 and 0.7, respectively (Fornell & Larcker, 1981; Hair et al., 2014).

Moreover, according to Hair et al. (2010), factor loadings should not be less than 0.5. The results of the measurement model tests are displayed in Table 1. It is presented that the combined reliability is higher than 0.7. The average variance extracted (AVE) is higher than 0.5, and the factor loading is higher than 0.7, confirming the measurement model tests. Besides, the discriminant validity is displayed in Table 2.

Table 1. Convergent Validity, Cronbach's Alpha, Composite Reliability, AVE					
Construct	**Indicators**	**SEM Loadings**	**Cronbach's alpha**	**Composite Reliability**	**AVE**
Investor's investment decision (IID)	IID1	.844	.913	.912	.875
	IID2	.816			
	IID3	.964			
	IID4	.969			
	IID5	.925			
	IID6	.892			
Overconfidence-Bias (OCB)	OCB1	.943	.925	.907	.812
	OCB2	.902			
	OCB3	.838			
	OCB4	.904			
	OCB5	.890			
	OCB6	.852			
Religiosity (R)	R1	.979	.911	.931	.884
	R2	.942			
	R3	.998			
	R4	.917			
	R5	.924			

Table 2. Discriminant Validity			
Variables	IID	OCB	R
Investor's investment decision (IID)	0.719		
Overconfidence Bias (OCB)	0.851	0.803	
Religiosity (R)	0.886	0.788	0.893

4.2. Assessment of the Structural Model

Assessment of the Structural Model tested with Smart P.L.S. bootstrapping. Table 3 displays the test results for the model. Table 3 displays the direct result without the moderator variable. It is clear that all relations have a value higher than 1.96 of t and a p-value lesser than 0.05. Consequently, overconfidence bias and religious affiliation have essential relationships with decision-making by investors. Therefore, H1 and H3 were supported. In addition, the magnitude of the result (f2) overconfidence is 0.19, for religious is 0.23. According to Cohen (1988), this result size (f2) is appropriate for all cases. In addition, Table 4 displays the moderating impact. In all circumstances, the

moderating impact is significant.

Table 3. Direct Effects

Hypotheses	Relationship	Original Sample	SD	t-value|	p-value	(f^2)	Decision
H_1	OC -> IID	-0.302	0.035	2.459	0.008	0.19	Accepted
H_3	R -> IID	0.433	0.062	3.674	0.005	0.23	Accepted

Table 4: Indirect Effects

Hypothesis	Relationship	Original Sample	SD	t-value|	p-value	Decision
H_2	OC*R -> IIDM	0.214	0.069	2.760	0.009	Moderation

Moreover, Table 5 displays the excellence of the model by assessing the predictive relevance (Q^2). The Q^2 must be higher than zero (Henseler et al., 2009).

Table 5: Predictive Relevance (Q^2)

	SSO	SSE	$Q^2 = (1-SSE/SSO)$
Investor's Investment decision (IID)	370.000	169.837	0.621

5. DISCUSSION

The results of the study found that overconfidence has a significant relationship with the decisions made by investors to invest at a t-value of 2.549. However, β = 00.302 indicates a negative relationship. It shows that overconfidence has a negative impact on investment decisions. Increased self-esteem among investors reduces the accuracy of investment decisions.

To conclude, the current study examined the effect of religious modelling between the overconfidence and investment decisions of investors. It is found that religion plays a role in the balance between overconfidence and investment decisions by investors at t-value 2.760 and β = 0.214. It shows that religion positively affects investor decisions by reducing the negative effects of overconfidence.

6. CONCLUSION

This study investigated the role of overconfidence in investor decision-making processes. In addition, the current research examines the role of religion as a moderator between over-confidence and the decision-making process for investors. The study focused on individual investors and retailers in Pakistan.

It has been suggested that psychological factors play an important role in investing in investment. Many affirmative biases improve investor decision-making accuracy (Reiter-Gavish et al., 2021). It helps the investor to make the right financial decision in the right way. However, overconfidence reduces investment decision-making accuracy (Menyeh, 2021). Because of overconfidence, an investor may make the wrong decision to invest (Menyeh, 2021). In addition, religion is one of the most important factors affecting the accuracy of investment decisions (Auriol et al., 2021). Faith increases the decision-making accuracy of Muslim investors in Pakistan (Murad & Starmer, 2021).

Investigators are invited to examine various political factors that influence investment decisions as political factors have a significant influence (Arora & Chakraborty, 2021). Therefore, the current model should be tested by adding more political elements.

REFERENCES

Abdelsalam, O., Elnahass, M., Batten, J. A., & Mollah, S. (2021). New insights into bank asset securitization: The impact of religiosity. Journal of Financial Stability, 54, 100854. https://doi.org/10.1016/j.jfs.2021.100854

Adekoya, O. B., Oliyide, J. A., Akinseye, A. B., & Ogunbowale, G. O. (2021). Oil and multinational technology stocks: Predicting fear with fear at the first and higher order moments. Finance Research Letters, April, 102210. https://doi.org/10.1016/j.frl.2021.102210

Afzali, M., Çolak, G., & Fu, M. (2021). Economic uncertainty and corruption: Evidence from public and private firms. Journal of Financial Stability, 57, 100936. https://doi.org/10.1016/j.jfs.2021.100936

Arora, J., & Chakraborty, M. (2021). Does the ease of reading of financial disclosures influence investment decision? Economics Letters, 204, 109883. https://doi.org/10.1016/j.econlet.2021.109883

Auriol, E., Delissaint, D., Fourati, M., Miquel-Florensa, J., & Seabright, P. (2021). Betting on the lord: Lotteries and religiosity in Haiti. World Development, 144, 105441. https://doi.org/10.1016/j.worlddev.2021.105441

Betzer, A., Limbach, P., Rau, P. R., & Schürmann, H. (2021). Till death (or divorce) do we part: Early-life family disruption and investment behavior? Journal of Banking and Finance, 124. https://doi.org/10.1016/j.jbankfin.2021.106057

Brunen, A. C., & Laubach, O. (2021). *Do sustainable consumers prefer socially responsible investments? A study among the users of robo advisors. Journal of Banking and Finance, 106314. https://doi.org/10.1016/j.jbankfin.2021.106314*

Brzeszczyński, J., Gajdka, J., & Schabek, T. (2021). *How risky are the socially responsible investment (SRI) stocks? Evidence from the Central and Eastern European (CEE) companies. Finance Research Letters, 42(January), 101939. https://doi.org/10.1016/j.frl.2021.101939*

Cabrera-Paniagua, D., & Rubilar-Torrealba, R. (2021). *A novel artificial autonomous system for supporting investment decisions using a Big Five model approach. Engineering Applications of Artificial Intelligence, 98(June 2020), 104107. https://doi.org/10.1016/j.engappai.2020.104107*

Chakrabarti, G., & Sen, C. (2021). *Dynamic market risk of green stocks across regions: Where does the devil lie? Journal of Cleaner Production, 303, 127028. https://doi.org/10.1016/j.jclepro.2021.127028*

Demiralay, S., Gencer, H. G., & Bayraci, S. (2021). *How do Artificial Intelligence and Robotics Stocks co-move with traditional and alternative assets in the age of the 4th industrial revolution? Implications and Insights for the COVID-19 period. Technological Forecasting and Social Change, 171(December 2020), 120989. https://doi.org/10.1016/j.techfore.2021.120989*

Dyer, T. A. (2021). *The demand for public information by local and nonlocal investors: Evidence from investor-level data. Journal of Accounting and Economics, 72(1), 101417. https://doi.org/10.1016/j.jacceco.2021.101417*

Elgebeily, E., Guermat, C., & Vendrame, V. (2021). *Managerial optimism and investment decision in the UK. Journal of Behavioral and Experimental Finance, 31, 100519. https://doi.org/10.1016/j.jbef.2021.100519*

Gershoni, N., & Low, C. (2021). *The power of time: The impact of free IVF on Women's human capital investments. European Economic Review, 133, 103645. https://doi.org/10.1016/j.euroecorev.2020.103645*

Hussain, S., Rehman, K., Maqbool, A., Rehman, S., & Ali, M. A. (2021). *The Impact Of E-Satisfaction , Personality Traits , Religiosity And Locus Of Control On Investor ' s Decision Making With Mediating Role Of Financial Behavior And E -Loyalty. 10(2), 2707–2723.*

Jiang, H., & Hu, B. Q. (2021). *A novel three-way group investment decision model under intuitionistic fuzzy multi-attribute group decision-making environment. Information Sciences, 569, 557–581. https://doi.org/10.1016/j.ins.2021.05.026*

Khedmati, M., Aminu Sualihu, M., & Yawson, A. (2021). *Does religiosity matter for corporate labor investment decisions? Journal of Contemporary Accounting and Economics, 17(2), 100264. https://doi.org/10.1016/j.jcae.2021.100264*

Lai, C. (2019). *Personality Traits and Stock Investment of Individuals the.*

Maiti, M. (2021). *Quantile regression, asset pricing and investment decision. IIMB Management Review, 33(1), 28–37. https://doi.org/10.1016/j.iimb.2021.03.005*

Menyeh, B. O. (2021). *Financing electricity access in Africa: A choice experiment study of household investor preferences for renewable energy investments in Ghana. Renewable and Sustainable Energy Reviews, 146(August 2020), 111132. https://doi.org/10.1016/j.rser.2021.111132*

Murad, Z., & Starmer, C. (2021). *Confidence snowballing and relative performance feedback. Journal of Economic Behavior and Organization, 190, 550–572. https://doi.org/10.1016/j.jebo.2021.08.006*

Reiter-Gavish, L., Qadan, M., & Yagil, J. (2021). *Investors' personal characteristics and*

trading decisions under distressed market conditions. *Borsa Istanbul Review.* https://doi.org/10.1016/j.bir.2021.04.005

Tabe-Ojong, M. P., & Nshakira-Rukundo, E. (2021). Religiosity and parental educational aspirations for children in Kenya. *World Development Perspectives, 23(April),* 100349. https://doi.org/10.1016/j.wdp.2021.100349

Ul, W., Ali, Q., & Wu, H. (2021). International Journal of Hospitality Management Relationships between external knowledge, internal innovation, firms' open innovation performance, service innovation and business performance in the Pakistani hotel industry. *International Journal of Hospitality Management, 92(November 2020),* 102745. https://doi.org/10.1016/j.ijhm.2020.102745

Wu, Y., Zhang, T., & Yi, L. (2021). Regional energy internet project investment decision making framework through interval type-2 fuzzy number based Choquet integral fuzzy synthetic model. *Applied Soft Computing, 111,* 107718. https://doi.org/10.1016/j.asoc.2021.107718

Xia, W., Guo, X., Luo, J., Ye, H., Chen, Y., Chen, S., & Xia, W. (2021). Religious identity, between-group effects and prosocial behavior: Evidence from a field experiment in China. *Journal of Behavioral and Experimental Economics, 91(January),* 101665. https://doi.org/10.1016/j.socec.2021.101665