

THE FINANCIAL DECISION MAKING OF RETAIL INVESTORS IN PAKISTAN STOCK EXCHANGE: A COMPREHENSIVE ANALYSIS OF KEY FACTORS

### Shahzeb Khurshid<sup>1</sup> & Ashfaq Ahmad<sup>2</sup>

<sup>1</sup>Ph.D. Scholar, Hailey College of Commerce, Punjab University, Lahore, Pakistan <sup>2</sup>Professor, Hailey College of Commerce, University of the Punjab, Lahore, Pakistan

KEYWORDS	ABSTRACT
Traditional Finance, Risk Perception, Cultural Factors, SEM, Higher- Order Construct	In recent years, field of behavioral finance has gained increasing attention, with numerous studies investigating impact of various factors on investors' decision-making. However, there remains a critical gap in literature when it comes to a comprehensive understanding of the factors that influence retail investors' decision-making. This gap presents a chance for further research to explore factors that affect retail investors' decision-making, particularly in developing nations like Pakistan. The study examines both behavioral and external factors that impact the financial decision-making of retail investors in Pakistan. The research includes a sample of retail investors who invest in the Pakistan stock market, and data is collected using the simple random sampling technique. 1000+ questionnaire were distributed & 545 responses were received. The researcher used Smart-PLS for the purpose to analyze both measurement model and structural model. Results reveal that all exogenous variables have a significant influence financial decisions of retail investors in Pakistan stock market. Results hold significant implications & limitations for behavioral finance.
Corresponding Author	
Email:	scholar.shahzeb4@gmail.com
DOI	https://doi.org/10.53664/JSRD/04-01-2023-12-133-145

### INTRODUCTION

Investment decisions taken by investors are one of the major indicators that define the progress of an economy at its micro and macro levels. Investment is nucleus of the economy that is important for its growth. The trading volume in the stock markets increases day by day, showing the increase in the financial literacy regarding investment (Botzen, Duijndam, & van Beukering, 2021). The recent economic developments and upgradation show that stock markets are getting more volatile and unstable these days than the previous. Due to the increase in volatility, the risk associated with the stock is also increased (Bosch & Corgnet, 2022). The volatility of the stock market has long been a

concern for professionals, scholars, and investors alike. Traditional finance claims that stock market has always been efficient, and stock price reflects all available information. Traditional finance also assumes that investors are always rational in market and design their portfolio based on rationale assumptions (Quddoos, Rafique, Kalim, & Sheikh, 2020). Many scholars presented various theories in support of traditional finance, like the Efficient Market Hypothesis (EMH) and Expected Utility Theory (EUT). Thus, these social factors influence and change the decision–making perspective of an individual. Theory of efficient market hypothesis is based upon two major assumptions; the stock price in the market reflects all information (previous, public, and private) which means the market is efficient. While the second assumption is that there is no anomaly in the market just because the investors are always rational in the market and select the company for making the investment upon required rationality.

Expected utility theory supports traditional finance's claim and assumes that investors are being rational in stock market and make their financial decisions after considering various alternatives. While on the other hand, researchers introduce a new paradigm of behavioral finance that directs the investors are not rational in the market. In the literature (Bosch-Rosa & Corgnet, 2022; Botzen, Duijndam, & van Beukering, 2021), many factors have been identified that affect retail investors financial decision-making. Recent studies support that irrational behaviors of investors come from behavioral biases, emotions, and social pressures. In previous literature (Bouteska & Regaieg, 2017; Trejos, Deemen, Rodríguez, & Gómez, 2019; Warmath, Piehlmaier, & Robb, 2019), there are various factors that affect retail investor financial decisions, risk and return are one of major elements that have a maximum consideration from the side of investor while investing in the financial market. The irrational behaviors are attached to retail investors and influence institutional investors' decision-making. It is not only criteria for making investment like according to Jaiyeoba, Adewale, Haron, and Ismail (2018), Social and cultural factor are major factors that elaborate the investment pattern of retail investor. Institutional factor contributes to major rule while making investment decisions in stock exchange.

Thus, the basic objective of current study is to examine multiple factors that influence investment making decisions retail investors. The recent economic developments and upgradation show that the stock markets are getting more volatile and unstable these days than the previous. Due to the increase in volatility, the risk associated with the stock is also increased. The core objective of the study has various sub-objectives: To examine the relationship of psychological factors, social and cultural factors, and institutional factors with retail investors' investment decision-making in the PSX. To investigate the role of investor's risk perception as a mediation between the exogenous and endogenous variables. Consequently, the objectives mentioned above are classified into multiple research questions. RQI: Do the behavioral biases, the cultural and social factors, and institutional factors directly influence the perception of individual investors while taking the financial decisions in the PSX? RQ2: Do the behavioral biases, the cultural and social factors, and institutional factors indirectly affect retail investors' financing decision-making process through the mediation of risk perception? To answer these research questions, the researcher collected research data through the well-structured questionnaire adapted from the literature to get the feedback from the individual investors of PSX.

#### LITERATURE REVIEW

#### Behavioral Biases & Financial Decisions

Financial decision-making is process in which investors consider various factors to evaluate diverse alternatives for making the investment. These factors include demographical factors (Age, gender, race, income, & education), technical factors, situational factors (economic, cultural, environmental, social, and legal), and behavioral factors. He, Chen, and Hu (2019), process regarding the financial decisions of the individual investor is depends on internal and external factors that influence their investment behavior. Psychological factors consider one of most prominent aspects that define the retail investor's financial decisions. A wide range of literature (Brahmana, Hooy, & Ahmad, 2012; Osagie & Chijuka, 2021; Phan & Zhou, 2014) examined the relationship of different psychological factors with the retail investor's financial decisions. Through empirical findings of study, researchers concluded that different psychological factors significantly influence the financial decisions of the individual investors.

 $H_1$  = Behavioral Biases significantly influence perception of an individual investor while investing.

Quddoos, Rafique, Kalim, and Sheikh (2020) suggest another important dimension about investors' overconfidence; sometimes, investors analyze the future of the market based upon the previous or past trends without examining the actual conditions or fundamental conditions analysis regarding the trend line. Muneeswaran, Babu, Gayathri, and Indhumathi (2020) studied the impact of various behavioral biases upon financial decision-making of retail investors and found the overconfidence bias has a significant effect on the decision-making of retail investors. Shahid, Aftab, Latif, and Mahmood (2018) found that the S&P 500 faced the problem of inflated because of over-optimistic behavior and overconfidence bias of the investors. The irrational behaviors are attached to the retail investors and influence institutional investors' decision-making. According to Waweru, Munyoki, and Uliana (2008), Investigations reveal that the investment decisions of institutional investors on the Nairobi stock exchange were influenced by the overconfidence bias. Thus, derive the following hypothesis:

 $H_{1a}$ =Overconfidence significantly influence the perception of individual investor while investing.

According to study which was conducted by Chen, Chiang, Lin, and Yang (2021) for the purpose to observe herd behavior in developed countries (America, France, Italy, Germany, Australia, Hong Kong, and Britain) and developing countries (Brazil, Malaysia, Turkey, and Argentina). Researcher first used the least square method to identify impact of herd behavior in decision-making process of investors while investing and found no rule of herd behavior. Meanwhile, researcher also executed the regression analysis to verify the results and observed significant impact of herd behavior in the decision-making process. Researcher concluded that market time frame also decides the effects of herd behavior upon mentality of investors. As per the findings of this study, herd behavior plays a vital role in decision-making when the stock prices increase due to Bull Run. While on the other hand, in bear market, when stock prices reduce, herd behavior does not significantly associate with financial decisions of retail investors, whether they are from developed or developing stock market. Therefore hypothesized,

 $\mathbf{H_{1b}}$  = There is the significant impact of Herd Behavior on financial decisions of the investors in PSX.

Rasool and Ullah (2020) examined various factors that have impact on financial decision-making of investors. Researchers found that mental accounting significantly influences investing decisions of Pakistani investors who invest in the Pakistan stock exchange. Setayesh and Sarmadinia (2019) explore various psychological factors that make an investor irrational in stock market. According to this study, many behavioral biases herd behavior, mental accounting, gambler fallacy, anchoring, and overconfidence are significantly associated with investors' intentions while making investment. On the other hand, Asad, Khan, and Faiz (2018) thus conducted their study to observe the mental accounting state in Pakistani investors context and thus found no significant relationship between mental accounting and investment decisions. Goyal and Kumar (2021), said, gambler fallacy is not significantly associated with retail investors' investment decision-making process. Thus, derive the following hypothesis:

 $H_{1c}$ = Mental Accounting significantly influence financial decision making of investors in Pakistan.

According to Dangol and Manandhar (2020), anchoring is an error in thinking of investors that may cause a misjudgment of data that leads to investors' irrational behavior in market. Anchoring is also considered the inability of investors to adopt new information that may divert their minds from the initial belief. Parveen and Siddigui (2018) examined the impact of various behavioral biases in financial decision-making process of retail investors in Pakistan Stock Exchange. The researcher explored different biases that increase the irrationality in the market and compromise the perfect market hypothesis. The study found many factors and anchoring in one of those that significantly affect the financial decision making of retail investors in stock exchange of Pakistan. The researcher concluded his results with the empirical evidence regarding the existence of anchoring bias in the behavior of investors.

H<sub>1d</sub> = Anchoring significantly influence financial decision making of the retail investors in Pakistan

# Social & Cultural Factors with Investment Decision Making

The social factor is another aspect that designs the investors' investment decision-making process. According to Akhter and Hoque (2022), Social factors cause a disposition change in the behaviors of an investor while making financial decisions. Thus, these social factors influence and change the decision-making perspective of individual. In literature, studies (Baig, Hussain, Davidaviciene, & Meidute-Kavaliauskiene, 2021; Patel; Wangi & Baskara) analyzed the impact of the social factors upon the behavioral aspects of investor while making financial decisions in stock market. Results of these studies suggested that the decision of an individual to participate in the stock market for the investment depends on the decision of surroundings of that concerned individual. Borgers, Derwall, Koedijk, and Ter Horst (2015) found evidence in their study that an individual typically buys a stock of a specific company when the social fellows of that individual also buy the same stock in their portfolio. In this connection, while on the other hand, Nagy and Obenberger (1994) suggested that social elements do not relate with the investor intentions towards making their investment in the stock market.

The study of Ali et al. (2014) found that the mutual fund's manager portfolios are usually like the portfolios of other mutual funds managers in same city. Grinblatt and Keloharju (2000) conducted

research upon the factors affecting the decision-making process of retail and institutional investors from Finnish Central Securities Depository. This study elaborates that the social aspects—Family, social media, and peer network influence behaviors of individual investors, and various investment decisions of an investor come from social surroundings. The study found that retail investors who are socially motivated predict stock return. According to Honeycutt (2021), Culture is a set of critical assumptions which are shared by members of a community in common. Aydemir and Aren (2017) found in their study that cultural factors like language, norms, and religious aspects are the crucial factors that define the behavior of stock market investors. Many studies in the literature examined the role of cultural differences while investigating investors' risk perception in the market. For example, Wang and Li (2020) analyzed the risk perception while making an investment in the stock market between the investors of China and America.

The researcher found in the empirical results that the risk tolerance level of Chinese investors is far more than the investors who are making their investment in America due to cultural differences. Other studies conducted in this domain concluded that the investors in the Asia side are less risk-averse than the Western side investors (Kathiravan, Selvam, Venkateswar, & Balakrishnan, 2021). Cano, Jareño, and Tolentino (2016) conducted research by analyzing the impact of culture upon the financial point of view and financial judgments of North American investors who are investing in the stock market. Study found that cultural factors do not significantly influence decision-making process of investors. Parveen and Siddiqui (2018) examined impact of various behavioral biases in financial decision-making process of the retail investors in Pakistan Stock Exchange and explored different biases that increase irrationality in market and compromise perfect market hypothesis. A survey of Lee, Switzer, and Wang (2019) found very interesting results that investors usually prefer to invest in those stocks that belong to the local culture or are near to the indigenous cultural norms. Therefore hypothesized:

 $H_2$ = Social and Cultural Factors significantly influence the financial decision making of retail investors in Pakistan.

#### **Institutional Factors & Financial Decisions**

Studies on the identification of institutional factors affecting financial decisions of retail investors are limited. Bocardo and Weijermars (2016) contributed to this area and identified the relationship of the growth perspective of a company and its impact upon financial decisions of retail investors. Lewis, Rogalski, and Seward (2003) also identified a company's profitability as factor that defined the investor behavior towards financial decisions. However, literature has its limitations regarding the influence of the qualitative institutional factors upon the financial decisions of retail investors in different situations for different leading outcomes. Based upon these arguments, the researcher drives a hypothesis:

 $H_3$ = Institutional Factors significantly influence the financial decision making of retail investors in Pakistan

### Mediation Role of Risk Perception

The perception of risk is a critical aspect that can significantly influence the investment decision—making of retail investors, as highlighted by (Wali, Rehman, & Zahid, 2022). In present study, we

aim to analyze both direct impact of behavioral biases, social and cultural factors, and institutional factors on the investment decision–making of retail investors and their indirect impact through the mediating role of risk perception that are significant for providing developmental opportunities. We hypothesize that,

 $H_4$ = Behavioral biases significantly influence the financial decision making of retail investors in Pakistan with the mediating impact of risk perception

 $H_5$ = Social and cultural factors significantly influence financial decision making of retail investors in Pakistan with the mediating impact of risk perception

 $H_6$ = Institutional factors significantly influence the financial decision making of retail investors in Pakistan with the mediating impact of risk perception

#### RESEARCH METHODOLOGY

This chapter elaborates the data sources and methodology of the current study. The present study examines effect of various factors (behavioral biases, social and cultural factors, and institutional factors) on the investment decision of retail investors who are investing in Pakistan stock exchange. In the second phase, impact of these independent variables is analyzed through the indirect path of risk perception.

#### Variables & Measurement

For the purpose of analyzing impact of factors affecting investment behaviors of retail investors, the researcher analyzed three independent variables: behavioral biases, social and cultural factors, and institutional factors. While on the other side, researcher uses the financial decision–making process or individual investors in Pakistan as dependent variable of current study. The dependent variable of current study is investment decisions. These investment decisions include retail investors' buying and selling decisions regarding a stock listed in Pakistan stock exchange. The investment decision of retail investors is measured through responses of investors against fundamental analysis, technical analysis, ratio analysis and other helpful information. Khurshid, Ahmed and Irrum (2021) led their research and measured investment decision in same manner. The risk perception of retail investor is the mediator variable of current study. It is measured through the items that represent the investor's perception of risk regarding various factors. Researchers measure the institutional factors through two major indicators: qualitative factors and quantitative factors. Qualitative factor includes many dimensions like company CSR, green production, workforce diversity, and internationalization. While on the other hand, quantitative factors are measured through various dimensions like ratio analysis, horizontal analysis, market capitalization, and share capital. The present study measures behavioral biases through four major indicators: herd behavior, availability bias, overconfidence, and mental accounting.

# Sample of Study

The core objective of the present study is to analyze the factors affecting the financial decisions of retail investors in Pakistan. So, the population of the present study includes all those retail investors who are making their investments in the Pakistan stock exchange. There are two major types of sampling techniques used in the literature: probability sampling and non-probability sampling. The researcher uses a simple random sampling technique for the purpose to select the sample of the

present study. Simple random sampling is a type of probability sampling technique, so impact of the researcher is minimum.

#### Data Collection Method

In order to collect data for this study, structural questionnaire was utilized, which was adapted from existing literature. To determine appropriate sample size, researcher used free calculator suggested by Patel, Doku, and Tennakoon (2003) with a 95% confidence level and 5% margin of error. Based on formula, a sample size of 310 was deemed sufficient for the data collection purposes. The researcher distributed 1000 questionnaires to retail investors and received 504 responses, which were included in the final sample.

### Analysis Technique

The researcher in the current study used structural equation modeling. This technique divided the whole analysis into two parts or phases. In the first phase, the researcher analyzes the measurement model and checks construct's reliability and validity. While on the other hand, in the second phase, the researcher measures structural model to analyze level of significance between all exogenous and endogenous variables. The researcher analyzes data through a disjoint two-stage approach. In the first stage, the researcher analyzes the measurement model analysis for lower-order construct and analyzes validity and reliability of all lower-order constructs. In second stage, the measurement model of higher-order construct is analyzed to confirm validity of HOC. The researcher conducted the pilot study to analyze data validity and reliability. The data was collected from the 55 investors to analyze the measurement model. The Cronbach alpha and composite reliability of the pilot study were more than 0.7, which shows the construct has reliability. At the same time, the researcher uses AVE to check the validation of data. The researcher uses HTMT to see the discriminant validity of constructs which must be less than 0.85. The HTMT of constructs was less than 0.85, so the data has discriminant validity.

#### **RESULTS OF STUDY**

This chapter provides a detailed analysis of the data and results derived from the study. The Smart PLS software was utilized to analyze both measurement and structural models. The structural model was employed to assess the validity and reliability of model, while also examining the significance of the relationship between variables. As the model exhibited the reflective-formative nature, the disjoin two-stage approach was utilized. In the first stage, the researcher analyzed the lower-order construct (LOC) measurement model, followed by an evaluation of higher-order construct (HOC) measurement model. According to Yamamoto et al. (2014), outer factor loading represents how much each item contributes to the formation of each latent variable. The minimum requirement for the outer loading is 0.7, so the researcher excluded all those items whose outer loading is less than 0.7. In order to assess the construct reliability of the lower-order construct, the researcher used two commonly used methods - Cronbach's alpha and composite reliability. Consequently, according to standard practice, the minimum threshold for both these measures is 0.7. The Cronbach's alpha and composite reliability for each construct exceed the minimum threshold of 0.7, providing evidence of their internal consistency.

Table 1 Construct Reliability

	Cronbach's Alpha	Composite Reliability
Anchoring	0.74	0.795
Herd Behavior	0.794	0.857
Institutional Factors (Quantitative)	0.908	0.936
Institutional Factors (Qualitative)	0.858	0.904
Investment Decisions	0.954	0.959
Mental Accounting	0.852	0.901
Over Confidence	0.871	0.907
Risk Perception	0.736	0.824
Social and Cultural Factors	0.839	0.879

The average variance extracted (AVE) uses for purpose of analyzing construct validity. According to Alarcón, Sánchez, and Olavide (2015), it should be more than 0.5. Table 2 represents the AVE of the lower-order construct that is almost more than 0.5. VIF is normally used by the researcher for the purpose of analyzing the multicollinearity of items. VIF should be less than five that shows no multicollinearity between the indicators. In this connection, annexure 02 shows the VIF table of the measurement model.

Table 2 Average Variance Extracted (AVE)

	Average Variance Extracted (AVE)
Anchoring	0.497
Herd Behavior	0.55
Institutional Factors (Quantitative)	0.628
Institutional Factors (Qualitative)	0.784
Investment Decisions	0.702
Mental Accounting	0.695
Over Confidence	0.661
Risk Perception	0.484
Social and Cultural Factors	0.524

Table 2 shows results of HTMT for purpose of checking discriminant validity between constructs. The figures of HTMT should be less than 0.9, and if it is more than 0.9, it means the data do not have discriminant validity.

Table 3 Construct Validity (HTMT)

	AN	HB	ID	IF(QUNT)	IF(QUL)	MA	OC	RP
Herd Behavior	0.812			<u> </u>	** (402)			
Institutional Factors (Qaun)	0.674	0.675						
Institutional Factors (Qual)	0.639	0.545	0.699					
Investment Decisions	0.66	0.735	0.772	0.878				
Mental Accounting	0.759	0.69	0.696	0.691	0.761			
Over Confidence	0.562	0.638	0.55	0.351	0.506	0.53		
Risk Perception	0.716	0.748	0.876	0.703	0.796	0.793	0.814	
Social and Cultural Factors	0.517	0.503	0.656	0.603	0.623	0.583	0.362	0.704

# Validating Higher Order Construct

Behavioral biases and institutional factors are two higher-order constructs used in present study. Thus, the behavioral biases have four lower-order constructs: overconfidence, mental accounting, herd behavior, and availability bias. While the institutional factor has two lower-order constructs (Qualitative factors and Quantitative factors). Outer weight, outer loadings, and VIF were used to identify higher-order construct validity. The outer weight is significant, outer loading is more than 0.7, and VIF is less than five, representing the higher-order construct that has validity. Table 4.5 shows the results.

Table 4 Validity of HOC

HOC	LOC	OW	TS	PV	OL	VIF
	Anchoring	0.102	1.78	0.076	0.743	2.119
Behavioral	Herd Behavior	0.209	3.638	0.000	0.799	2.21
Biases	Mental Accounting	0.441	7.205	0.010	0.838	1.77
	Over Confidence	0.462	8.315	0.000	0.839	1.589
Institutional	Qualitative Factors	0.678	9.553	0.000	0.972	2.558
factors	Quantitative Factors	0.377	4.851	0.050	0.906	2.558

#### Assessment of Structural Model

In order to assess the structural model, path analysis was conducted using Smart PLS software. Also, the SRMR (Standardized Root Mean Square) was calculated through PLS-Bootstrapping to check the model fitness. Sarstedt and Cheah (2019), an SRMR value of less than 0.08 indicates a good fit. The calculated value of SRMR for our model was 0.052, indicating that the model is a good fit. This assessment follows measurement model assessment conducted earlier, which analyzed the validity and reliability of the model.

Table 5 Results of R Square

	R Square	R Square Adjusted
Investment Decision	0.699	0.697
Risk Perception	0.686	0.684

Table 5 represents the results of r square from PLS bootstrapping. R square shows how much percent change in the dependent variable is explained by independent variables. These results show that approximately 70% of change in investment decisions is captured through available independent variables. While r square of risk perception is 0.686, which shows a 68% change in risk perception because of change in the independent variables (Behavioral biases, social and cultural factors, and institutional factors).

Table 6 Path Coefficients

	OS (O)	SM (M)	SD	TS	PV
Behavioral Biases -> Investment Decision	0.087	0.089	0.058	1.76	0.083
Behavioral Biases -> Risk Perception	0.613	0.613	0.04	15.339	0.000
Institutional Factors -> Investment Decision	0.292	0.292	0.044	6.681	0.020
Institutional Factors -> Risk Perception	0.145	0.142	0.04	3.614	0.002

Risk Perception -> Investment Decision	0.389	0.39	0.051	7.565	0.000
Social and Cultural factors -> Investment Decision	0.201	0.2	0.037	5.381	0.000
Social and Cultural factors -> Risk Perception	0.174	0.178	0.039	4.454	0.001

Table 6 shows results extracted from PLS-SEM for purpose of showing significance about impact of exogenous variables upon endogenous variables. Table shows that all exogenous variables have a significant impact on endogenous variables apart from behavioral biases. Results show that p-value of behavioral biases is more than 0.05, which shows that behavioral biases do not directly have significant impact on decisions. Researcher accepts  $H_1$  because behavioral biases affect investment decisions at 0.1 level of significance while accepted  $H_2$  and  $H_3$  as instructional factors and social factors are significantly linked with investment decisions making of retail investors at 0.01 and 0.05 levels of significance.

Table 7 Mediation analysis (Risk Perception)

•	-		
	Direct Impact	Indirect Impact	Mediation
Behavioral Biases	0.087*	0.239***	Partial Mediation
Institutional Factors	0.292**	0.056***	Partial Mediation
Social and Cultural Factors	0.201***	0.068***	Partial Mediation

<sup>\*\*\*</sup> Highly significance at 0.01 level of significance, \*\* Significance at 0.05 level of significance

Table 7 shows the mediation analysis through path coefficients. Results show that risk perception plays its role as mediator variable between all exogenous variables (Behavioral biases, institutional factors, and social factors) and endogenous variables that are investment decision. Thus, based upon these results, the researcher accepted the research hypothesis  $H_4$ ,  $H_5$ , and  $H_6$ . In this connection, the table represents that the risk perception partially mediates the relationship of independent and dependent variables.

#### **DISCUSSION & CONCLUSION**

The present study explores various dimensions and enhances body of existing knowledge regarding investor intentions towards making the investment in Pakistan stock market. Just like other studies, it also has some limitations. Firstly, current study takes only two dimensions of institutional factors, so the future researcher may consider other dimensions of institutional factors. Secondly, the present study analyzes the investment behaviors of retail investors who are making their investments in the Pakistan stock market. Investors' behaviors vary within and outside the geographical boundaries. So, the future researcher may also conduct research to analyze behavior of investor who is making their investment in the developed country and then compare the behaviors of both investors to get an in-depth understanding. Thus, the study offered significant and leading information about the most effective variables that are considered as significant predictors for shaping the attitudes and behaviors of investors. Thirdly, the researcher considers only four indicators of the behavioral biases, while the future researchers may consider the other biases as well to see the impact of these biases on investor behaviors.

<sup>\*</sup>Significance at 0.1 level of significance

Fourthly, the present study enhances the body of knowledge by analyzing the factors that affect the financial decision-making of retail investors who are making their investment in the Pakistan stock market. In the future, researchers may also go for exploration of factors that affects the investment decisions of institutional investors of Pakistan. Fifth, the researcher collected the data only once and made the analysis based upon that data. So, the researcher in future may collect longitudinal data to see the change of behavior because of changes in time. Lastly, Pakistan is a country with a huge versatility of behavior. Present study examines already developed factors and analyzes their effect on the investment behaviors of Pakistan. The researcher may adopt mixed-method approach in the future to explore new factors according to nature of investors in Pakistan. The stock exchange is a backbone of a country because it directs economic stability and progress. It is vital to analyze the momentum of stock market so that the policymakers use this information while deciding the future aspects of economic growth.

Investor behavior in the stock market is a major factor that decides the future progress of a stock market. In the literature, there are various factors that identify the change in investment behaviors of retail investors, but still there is a gap in the existing knowledge to evaluate these factors in the territory of Pakistan. Current study fulfils this gap and examine various factors that affect financial decision making of retail investors who are making their investment in the Pakistan stock exchange. Researchers analyze the impact of behavioral biases, social and cultural factors, and institutional factors on investment decision–making of retail investors in Pakistan. Results show that exogenous variables have a significant impact on the investment decisions of the retail investor. The researcher also analyzes the impact of these variables on investment decisions through an indirect path of risk perception. PLS–SEM analyzes these results and concludes that risk perception plays role of partial mediation between these variables. This study will help brokers to identify the behavior of investors who are investing in Pakistan stock exchange so that to provide and guide them according to their nature and behavior.

#### **REFERENCES**

- Akhter, T., & Hogue, M. E. (2022). Moderating Effects of Financial Cognitive Abilities and Considerations on Attitude–Intentions Nexus of Stock Market Participation. *International Journal of Financial Studies*, 10(1), 5.
- Alarcón, D., Sánchez, J. A., & De Olavide, U. (2015). Assessing convergent and discriminant validity in the ADHD-R IV rating scale: User-written commands for Average Variance Extracted (AVE), Composite Reliability (CR), and Heterotrait-Monotrait ratio of correlations (HTMT). Paper presented at the Spanish STATA meeting.
- Ali, S., Wagas, H., Asghar, M., Kalroo, R., Ayaz, M., & Khan, M. (2014). Foreign capital and investment in Pakistan: A cointegration and causality analysis. *Journal of Basic and Applied Scientific Research*, 4(4), 217–226.
- Asad, H., Khan, A., & Faiz, R. (2018). Behavioral Biases across the Stock Market Investors: Evidence from Pakistan. *Pakistan Economic and Social Review*, 56(1), 185–209.
- Aydemir, S. D., & Aren, S. (2017). Do the effects of individual factors on financial risk-taking behavior diversify with financial literacy? *Kybernetes*. 8,668–679.

- Baig, U., Hussain, B. M., Davidaviciene, V., & Meidute-Kavaliauskiene, I. (2021). Exploring Investment Behavior of Women Entrepreneur: Some Future Directions. *International Journal of Financial Studies*, 9(2), 20.
- Bocardo, A. B., & Weijermars, R. (2016). Total shareholder returns from petroleum companies and oilfield services (2004–2014): Capital gains and speculation dissected to aid corporate strategy and investor decisions. *Journal of Finance and Accounting*, 4(6), 351–366.
- Borgers, A., Derwall, J., Koedijk, K., & Ter Horst, J. (2015). Do social factors influence investment behavior and performance? Evidence from mutual fund holdings. Journal of Banking & Finance, 60, 112–126.
- Bosch-Rosa, D. C., & Corgnet, B. (2022). Cognitive finance. *Handbook of Experimental Finance, forthcoming*, 8, 3.
- Botzen, W., Duijndam, S., & Beukering, P. (2021). Lessons for climate policy from behavioral biases towards COVID-19 and climate change risks. *World Development*, 137, 105214.
- Bouteska, A., & Regaieg, B. (2017). Overconfidence bias, over/under-reaction of financial analysts on the Tunisian stock market, and their impact on the earnings forecasts. *International Journal of Economics and Financial Issues*, 7(2), 208.
- Cano, C., Jareño, F., & Tolentino, M. (2016). Investor behavior and flow-through capability in the US stock market. Frontiers in psychology, 7,668.
- Chen, Y.-F., Chiang, T. C., Lin, F.-L., & Yang, S.-Y. (2021). Dynamic Common Properties of National Herd Behavior of Stock Markets. In Advances in Pacific Basin Business, Economics and Finance: Emerald Publishing Limited.
- Dangol, J., & Manandhar, R. (2020). Impact of Heuristics on Investment Decisions: The Moderating Role of Locus of Control. *Journal of Business and Social Sciences Research*, 5(1), 1-14.
- Goyal, K., & Kumar, S. (2021). Financial literacy: A systematic review and bibliometric analysis. International Journal of Consumer Studies, 45(1), 80–105.
- Grinblatt, M., & Keloharju, M. (2000). The investment behavior and performance of various investor types: a study of Finland's unique data set. *Journal of financial economics*, 55(1), 43–67.
- Honeycutt, S. (2021). Examining the Influence of Socio-Cultural Demographics on Risk Perceptions and Preparedness Concerns Related to COVID-19.
- Jaiyeoba, H. B., Adewale, A. A., Haron, R., & Ismail, C. M. H. C. (2018). Investment decision behaviour of the Malaysian retail investors and fund managers. Qualitative Research in Financial Markets. 8 (2).
- Kathiravan, C., Selvam, M., Venkateswar, S., & Balakrishnan, S. (2021). Investor behavior and weather factors: evidences from Asian region. *Annals of Operations Research*, 299(1), 349–373.
- Khurshid, S., Ahmed, A., & Irrum, L. (2021). An Examination of Behavioral Factors Affecting the Retail Investor's Investment Decisions: The Moderating Role of Covid-19. *Journal of ISOSS*, 7(1), 105–120.
- Lee, S., Switzer, L. N., & Wang, J. (2019). Risk, culture and investor behavior in small (but notorious) Eurozone countries. *Journal of International Financial Markets, Institutions and Money*, 60, 89–110.

- Lewis, C. M., Rogalski, R. J., & Seward, J. K. (2003). Industry conditions, growth opportunities and market reactions to convertible debt financing decisions. *Journal of Banking & Finance*, 27(1), 153–181.
- Muneeswaran, R., Babu, M., Gayathri, J., & Indhumathi, G. (2020). Investors Cognitive Biases and Investment Decision. *International Journal of Management*, 11(10).
- Nagy, R. A., & Obenberger, R. W. (1994). Factors influencing individual investor behavior. Financial Analysts Journal, 50(4), 63-68.
- Parveen, S., & Siddigui, M. A. (2018). Anchoring Heuristic, Disposition Effect and Overconfidence Bias in Investors: A Case of Pakistan Stock Exchange. Abasyn Journal of Social Sciences, 11(2), 280–294.
- Quddoos, M. U., Rafigue, A., Kalim, U., & Sheikh, M. R. (2020). Impact of Behavioral Biases on Investment Performance in Pakistan: The Moderating Role of Financial Literacy. *Journal of Accounting and Finance in Emerging Economies*, 6(4), 1199–1205.
- Rasool, N., & Ullah, S. (2020). Financial literacy and behavioural biases of individual investors: empirical evidence of Pakistan stock exchange. *Journal of Economics, Finance and Administrative Science*.
- Setayesh, M. H., & Sarmadinia, A. (2019). A Moderate Viewpoint to Efficient-Market Hypothesis and Behavioral Finance: Efficiency of the Behavior of Participants in Transactions. *Iranian Journal of Accounting, Auditing and Finance*, 3(1), 1–12.
- Shahid, M. N., Aftab, F., Latif, K., & Mahmood, Z. (2018). Behavioral finance, investors' psychology and investment decision making in capital markets: an evidence through ethnography and semi-structured interviews. Asia Pacific J. Emerg. Mark, 2(1), 14.
- Trejos, C., van Deemen, A., Rodríguez, Y. E., & Gómez, J. M. (2019). Overconfidence and disposition effect in the stock market: A micro world based setting. Journal of Behavioral and Experimental Finance, 21, 61–69.
- Wali, S., Rehman, S. U., & Zahid, M. (2022). Behavioral Factors and Individual Investor's Behavior. A Comparative Study of Islamabad and Peshawar using Partial Least Squares Approach. Journal of Behavioral Sciences, 32(1).
- Wang, L., & Li, Y. (2020). The negotiation of EU–China comprehensive agreement on investment and its potential impact in the post–pandemic era. Journal of Chinese Economic and Business Studies, 18(4), 365–372.
- Wangi, L. A. L. G. C., & Baskara, I. G. K. The Effect of Financial Attitude, Financial Behavior, Financial Knowledge, And Sociodemographic Factors on Individual Investment Decision Behavior. 34 (2), 43–67.
- Warmath, D., Piehlmaier, D., & Robb, C. (2019). The impact of shared financial decision making on overconfidence for married adults. *Financial Planning Review*, 2(1), e1032.
- Waweru, N. M., Munyoki, E., & Uliana, E. (2008). The effects of behavioural factors in investment decision–making: a survey of institutional investors operating at the Nairobi Stock Exchange. International Journal of Business and Emerging Markets, 1(1), 24–41.
- Yamamoto, H., Fujimori, T., Sato, H., Ishikawa, G., Kami, K., & Ohashi, Y. (2014). Statistical hypothesis testing of factor loading in principal component analysis and its application to metabolite set enrichment analysis. *BMC bioinformatics*, 15(1), 1–9.